SEQUENCE LISTING

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<110>   Corvas International , Inc.
        Vlasuk, George Phillip
        Stanssens, Patrick Eric Hugo
        Messens, Joris Hila Lieven
        Lauwereys, Marc Josef
        Laroche, Yves Rene
        Jespers, Laurent Stephane
        Gansemans, Yannick Georges Jozef
        Moyle, Matthew
        Bergum, Peter W.

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PROTEIN

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Phe Leu Leu Val Ser Leu Cys Ser Ala Arg Thr Val Arg Lys Ala Tyr
                15   20   25
CCG GAG TGT GGT GAG RAT GAA TGG CTC GAC GAC TGT GGA ACT CAG AAG   147
Pro Glu Cys Gly Glu Asn Glu Trp Leu Asp Asp Cys Gly Thr Gin Lys
            30   35   40
CCA TGC GAG 0CC AAG TGC RAT GAG GRA CCC CCT GAG GAG GAA OAT CCG   195
Pro Cys Glu Ala Lys Cys Asn Glu Glu Pro Pro Glu Glu Glu Asp Pro
            45   50   55
ATA TGC CGC TCA CGT GOT TGT TTA TTA CCT CCT GCT TGC GTA TGC AAA   243
Ile Cys Arg Ser Arg Gly Cys Leu Leu Pro Pro Ala Cys Val Cys Lys
        60   65   70
GAC OGA TTC TAC AGA GAC ACG OTO ATC GGC GAC TOT GTT AGO GAA GAA   291
Asp Gly Phe Tyr Arg Asp Tsr Yal Ile Oly Asp Cys Val Arg Glu Glu
75   80   85   90
GAA TOC GAC CAR CAT GAG ATT ATA CAT GTC T GAACGAGAAA GCAACAATAA CC   344
Giu Cys Asp Gin His Glu Ile Ile His Val
                95   100

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    30   35   40
Leu Leu Pro Pro Ala Cys Val Cys Lys Asp Gly Phe Tyr Arg
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Phe Leu Leu Val Ser Leu Cys Ser Thr Arg Thr Val Arg Lys Ala Tyr
                15   20   25
CCG GAG TGT GGT GAG AAT GAA TGG CTC GAC GTC TGT GGA ACT AAG AAG   147
Pro Glu Cys Gly Glu Asn Glu Trp Leu Asp Val Cys Gly Thr Lys Lys
            30   35   40
CCA TGC GAG GCC AAG TGC AGT GAG GAA GAG GAG GAA GAT CCG ATA TGC   195
Pro Cys Glu Ala Lys Cys Ser Glu Glu Glu Glu Glu Asp Pro Ile Cys
        45   50   55
CGA TCA TTT TCT TGT CCG GGT CCC GCT GCT TGC GTA TGC GAA GAC GGA   243

70016337v1

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Arg Ser Phe Ser Cys Pro Gly Pro Ala Ala Cys Val Cys Glu Asp Gly
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TTC TAC AGA GAC ACG GTG ATC GGC GAC TGT GTT AAG GAA GAA GAA TGC                291
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GAC CAA CAT GAG ATT ATT CAT GTC TGAACGAGAG AGCAGTRATA ACCAAAGGTT C            346
Asp Gln His Glu Ile Ile His Val
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Pro Ile Cys Arg Ser Phe Ser Cys Pro Gly Pro Ala Ala Cys Val Cys
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Pro Pro Glu Glu Glu Asp Pro Ile Cys Arg Ser Arg Gly Cys Leu Leu
        35                  40                  45
Pro Pro Ala Cys Val Cys Lys Asp Gly Phe Tyr Arg Asp Thr Val Ile
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            20                  25                  30
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        35                  40                  45
Ala Cys Val Cys Glu Asp Gly Phe Tyr Arg Asp Thr Val Ile Gly Asp
    50                  55                  60
Cys Val Lys Glu Glu Glu Cys Asp Gln His Glu Ile Ile His VaL
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                      1               5                   10
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Leu Leu Leu Val Ser Gln Cys Ser Gly Lys Pro Asn Asn Val Met Thr
                15                  20                  25
AAC GCT TGT GGT CTT AAT GAA TAT TTC GCT GAG TGT GGC AAT ATG AAG             146
Asn Ala Cys Gly Leu Asn Glu Tyr Phe Ala Glu Cys Gly Asn Met Lys
            30                  35                  40
GAA TGC GAG CAC AGA TGC AAT GAG GAG GAA AAT GAG GAA AGG GAC GAG             194
Glu Cys Glu His Arg Cys Asn Glu Glu Glu Asn Glu Glu Arg Asp Glu
            45                  50                  55
GAA AGA ATA ACG GCA TGC CTC ATC CGT GTG TGT TTC CGT CCT GGT GCT             242
Glu Arg Ile Thr Ala Cyc Leu Ile Arg Val Cys Phe Arg Pro Gly Ala
        60                  65                  70
TGC GTA TGC AAA GAC GGA TTC TAT AGA AAC AGA ACA GGC AGC TGT GTG             290
Cys Val Cys Lys Asp Gly Phe Tyr Arg Asn Arg Thr Gly Ser Cys Val
    75                  80                  85                  90
GAA GAA GAT GAC TGC GAG TAC GAG AAT ATG GAG TTC ATT ACT TTT GCA             338
Gln Glu Asp Asp Cys Glu Tyr Glu Asn Met Glu Phe Ile Thr Phe Ala
                95                  100                 105
CCA GAA GTA CCG  ATA TGT GGT TCC AAC GAA AGG TAC TCC GAC TGC GGC            386
Pro GLn Val Pro Ile Cys Gly Ser Asn Glu Arg Tyr Ser Asp Cys Gly
            110                 115                 120
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        125                 130                 135
GGA GAT GAG GCA TGC CGC TCA CAT GTT TGT GAA CGT CCT GGT GCC TGT        482
Gly Asp Glu Ala Cys Arg Ser His Val Cys Glu Arg Pro Gly Ala Cys
        140                 145                 150
GTA TGC GAA GAC GGG TTC TAC AGA AAC AAA AAA GGT AGC TGT GTG GAA        530
Val Cys Glu Asp Gly Phe Tyr Arg Asn Lys Lys Gly Ser Cys Val Glu
155                 160                 165                 170
AGC GAT GAC TGC GAA TAC GAT AAT ATG GAT TTC ATC ACT TTT GCA CCA        578
Ser Asp Asp Cys Glu Tyr Asp Asn Met Asp Phe Ile Thr Phe Ala Pro
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GAA ACC TCA CGA TAACCAAGA TGCTACCTCT CGTACGCAAC TCCGCTGATT GAGGTT       636
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TCG CAR TGT ART GGA AAA GGA TTC CCG AAA TGT GAC GTC ART GAA AGA        99
Ser Gln Cys Asn Gly Lys Ala Phe Pro Lys Cys Asp Val Asn Gln Arg
15                  20                  25                  30
TTC GAO GTG TGT GGC ART CTG AAG GAG TGC GAG CTC AAG TGC GAT GAG        147
Phe Gln Val Cys Gly Asn Leu Lys Glu Cys Glu Leu Lys Cys Asp Glu
                35                  40                  45
GAC CCT AAG ATA TGC TCT CGT GCA TGT ATT CGT CCC CCT GCT TGC GTA        195
Asp Pro Lys Ile Cys Ser Arg Ala Cys Ile Arg Pro Pro Ala Cys Val
            50                  55                  60
TGC GAT GAC GGA TTC TAC AGA GAC AAA TAT GGC TTC TGT GTT GAA GAA        243
Cys Asp Asp Gly Phe Tyr Arg Asp Lys Tyr Gly Phe Cys Val Gln Gln
        65                  70                  75
GAC GAA TGT AAC GAT ATG GAG ATT ATT ACT TTT CCA CCA GAA ACC AAA TG     293
Asp Glu Cys Asn Asp Met Glu Ile Ile Thr Phe Pro Pro Gln Thr Lys
        80                  85                  90

ATGACCGAAG CTTCCACCTT TCTATACATA TCTTCACTGC TTGACAGGCT TCTCGACAAT       353
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                          1   5   10
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Leu Leu Leu Val Ser Gln Cys Asn Gly Arg Thr Val Lys Lys Cys Gly
             15   20   25
AAG AAT GAA AGA TAC GAC GAC TGT GGC AAT CGA AAG GAC TGC GAG ACC   148
Lys Asn Glu Arg Tyr Asp Asp Cys Gly Asn Ala Lys Asp Cys Glu Thr
             30   35   40
AAG TGC GGT GAA GAG GAA AAG GTG TGC CGT TCG CGT GAG TGT ACT AGT   196
Lys Cys Gly Glu Glu Glu Lys Val Cys Arg Ser Arg Glu Cys Thr Ser
         45   50   55
CCT GGT GCC TGC GTA TGC GAA CAA GGA TTC TAC AGA GAT CCG GCT GGC   244
Pro Gly Ala Cys Val Cys Glu Glu Gly Phe Tyr Arg Asp Pro Ala Gly
         60   65   70
GAC TGT GTC ACT GAT GAA GAA TGT GAT GAA TGG AAC AAT ATG GAG ATC   292
Asp Cys Val Thr Asp Glu Glu Cys Asp Glu Trp Asn Asn Met Glu Ile
75   80   85   90
ATT ACT ATG CCA AAA CAG TAGTGCGAAG TTCCCTTCTT TCTCCAAATC TGCTCCGTG   349
Ile Thr Met Pro Lys Gln
                     95

CTCAATTATC ACACACCTCC ACTAGTTAAG ATTGACTGAC TCTCTTGCAT TGTAGTATTT   409

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AAG CAT TGC GAA CTC AAG TGC GAT AGG GAG CTA ACT GAG AAA GAA GAG          99
Lys His Cys Glu Leu Lys Cys Asp Arg Glu Leu Thr Glu Lys Glu Glu
15                  20                  25                  30
CAG GCA TGT CTC TCA CGT GTT TGT GAG AAG TCC GCT TGC GTA TGC AAT         147
Gln Ala Cys Leu Ser Arg Val Cys Glu Lys Ser Ala Cys Val Cys Asn
                    35                  40                  45
GAC GGA TTA TAC AGA GAC AAG TTT GGC AAC TGT GTT GAA AAA GAC GAA         195
Asp Gly Leu Tyr Arg Asp Lys Phe Gly Asn Cys Val Glu Lys Asp Glu
               50                  55                  60
TGC AAC GAT ATG GAG ATT ATT ACT TTT GCA CCA GAA ACC AAA TAATGGCCTA     247
Cys Asn Asp Met Glu Ile Ile Thr Phe Ala Pro Glu Thr Lys
           65                  70                  75

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TTTGCTTGAC TCTGTGTATT TAAGCATTGT CTACTAATGG GCAAAGTAAA GCATTGTAAG      367

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                        1               5                  10
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Leu Leu Leu Ile Ser Leu Cys Ser Gly Lys Ala Ala Lys Lys Cys Gly
               15                  20                  25
CTC AAT GAA AGG CTG GAC TGT GGC AAT CTG AAG CAA TGC GAG CCC AAG         146
Leu Asn Glu Arg Leu Asp Cys Gly Asn Leu Lys Gln Cys Glu Pro Lys
           30                  35                  40
TGC AGC GAC TTG GAA AGT GAG GAG TAT GAG GAG GAA GAT GAG TCG AAA         194
Cys Ser Asp Leu Glu Ser Glu Glu Tyr Glu Glu Glu Asp Glu Ser Lys
       45                  50                  55
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TGT CGA TCA CGT GAA TGT TCT CGT CGT GTT TGT GTA TGC GAT GAA GGA          242
Cys Arg Ser Arg Glu Cys Ser Arg Arg Val Syc Val Syc Asp Glu Gly
     60                  65                  70
TTC TAC AGA AAC AAG AAG GGC AAG TGT GTT CGA AAA GAT GTT TGC GAG          290
Phe Tyr Arg Asn Lys Lys Gly Lys Cys Val Ala Lys Asp Val Cys Glu
75                  80                  85                  90
GAC GAC AAT ATG GAG ATT ATC ACT TTT CCA CCA GAA GAC GAA TGT GGT          338
Asp Asp Asn Met Glu Ile Ile Thr Phe Pro Pro Glu Asp Glu Cys Gly
                95                  100                 105
CCC GAT GAA TGG TTC GAC TAC TGT GGA AAT TAT AAG AAG TGC GAA CGC          386
Pro Asp Glu Trp Phe Asp Tyr Cys Gly Asn Tyr Lys Lys Cys Glu Arg
            110                 115                 120
AAG TGC AGT GAG GAG ACA AGT GAG AAA AAT GAG GAG GCA TGC CTC TCT          434
Lys Cys Ser Glu Glu Thr Ser Glu Lys Asn Glu Glu Ala Cys Leu Ser
        125                 130                 135
CGT GCT TGT ACT GGT CGT GCT TGC GTA TGC AAA GAC GGA TTG TAC AGA          482
Arg Ala Cys Thr Gly Arg Ala Cys Val Cys Lys Asp Gly Leu Tyr Arg
    140                 145                 150
GAC GAC TTT GGC AAC TGT GTT CCA CAT GAC GAA TGC AAC GAT ATG GAG          530
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     5                  10                  15
ACC TGT GGA CCA AAC GAG GAG TAC ACT GAA TGC GGG ACG CCA TGC GAG         153
Thr Cys Gly Pro Asn Glu Glu Tyr Thr Glu Cys Gly Thr Pro Cys Glu
20                  25                  30                  35
CCG AAG TGC AAT GAA CCG ATG CCA GAC ATC TGT ACT CTG AAC TGC ATC         201
Pro Lys Cys Asn Glu Pro Met Pro Asp Ile Cys Thr Leu Asn Cys Ile
                40                  45                  50
GTG AAC GTG TGT CAG TGC AAA CCC GGC TTC AAG CGC GGA CCG AAA GGA         249
Val Asn Val Cys Gln Cys Lys Pro Gly Phe Lys Arg Gly Pro Lys Gly
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Cys Val Ala Pro Gly Pro Gly Cys Lys
            70                    75
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Gly Ile Pro Leu Leu Leu Arg Phe Leu Gly Phe Leu Leu Val Thr Leu
            10                  15                  20
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Phe Gly Tyr Leu Leu Thr Phe Leu Lys Lys Gly Phe Gly Lys Ile Ala
            25                  30                  35
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Ile Ala Ile Ser Leu Phe Leu Ala Leu Ile Ile Gly Leu Asn Ser Ile
            40                  45                  50
CTT GTG GGT TAT CTC TCT GAT ATT AGC GCA CAA TTA CCC TCT GAT TTT           246
Leu Val Gly Tyr Leu Ser Asp Ile Ser Ala Gln Leu Pro Ser Asp Phe
        55                  60                  65
GTT CAG GGC GTT CAG TTA ATT CTC CCG TCT AAT GCG CTT CCC TGT TTT           294
Val Gln Gly Val Gln Leu Ile Leu Pro Ser Asn Ala Leu Pro Cys Phe
70                  75                  80                  85
TAT GTT ATT CTC TCT GTA AAG GCT GCT ATT TTC ATT TTT GAC GTT AAA           342
Tyr Val Ile Leu Ser Val Lys Ala Ala Ile Phe Ile Phe Asp Val Lys
                    90                  95                  100
CAA AAA ATC GTT TCT TAT TTG GAT TGG GAT AAA GGT GGA GGC TCA GGC           390
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Gly Ile Pro Leu Leu Leu Arg Phe Leu Gly Phe Leu Leu Val Thr Leu
            10                  15                  20
TTC GGC TAT CTG CTT ACT TTC CTT AAA AAG GGC TTC GGT AAG ATA GCT                     150
Phe Gly Tyr Leu Leu Thr Phe Leu Lys Lys Gly Phe Gly Lys Ile Ala
            25                  30                  35
ATT GCT ATT TCA TTG TTT CTT GCT CTT ATT ATT GGG CTT AAC TCA ATT                     198
Ile Ala Ile Ser Leu Phe Leu Ala Leu Ile Ile Gly Leu Asn Ser Ile
            40                  45                  50
CTT GTG GGT TAT CTC TCT GAT ATT AGC GCR CAA TTA CCC TCT GAT TTT                     246
Leu Val Gly Tyr Leu Ser Asp Ile Ser Ala Gln Leu Pro Ser Asp Phe
        55                  60                  65
GTT CAG GGC GTT CAG TTA ATT CTC CCG TCT AAT GCG CTT CCC TGT TTT                     294
Val Gln Gly Val Gln Leu Ile Leu Pro Ser Asn Ala Leu Pro Cys Phe
70                  75                  80                  85
TAT GTT ATT CTC TCT GTA AAG GCT GCT ATT TTC ATT TTT GAC GTT AAA                     342
Tyr Val Ile Leu Ser Val Lys Ala Ala Ile Phe Ile Phe Asp Val Lys
                90                  95                  100
CAA AAA ATC GTT TCT TAT TTG GAT TGG GAT AAA GGT GGA GGC TCA GGC                     390
Gln Lys Ile Val Ser Tyr Leu Asp Trp Asp Lys Gly Gly Gly Ser Gly
            105                 110                 115
GGA GGGCCAAGTC GGCCATCCCA TATCACGCGG CCGCGGATCC                                     433
Gly
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                                             1               5
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Gly Ile Pro Leu Leu Leu Arg Phe Leu Gly Phe Leu Leu Val Thr Leu
            10                  15                  20
TTC GGC TAT CTG CTT ACT TTC CTT AAA AAG GGC TTC GGT AAG ATA GCT                     150
Phs Gly Tyr Leu Leu Thr Phe Leu Lys Lys Gly Phe Gly Lys Ile Ala
            25                  30                  35
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ATT GCT ATT TCA TTG TTT CTT GCT CTT ATT ATT GGG CTT AAC TCA ATT        198
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         40                      45                  50
CTT GTG GGT TAT CTC TCT GAT ATT AGC GCA CAA TTA CCC TCT GAT TTT        246
Leu Val Gly Tyr Leu Ser Asp Ile Ser Ala Gln Leu Pro Ser Asp Phe
         55                      60                  65
GTT CAG GGC GTT CAG TTA ATT CTC CCG TCT AAT GCG CTT CCC TGT TTT        294
Val Gln Gly Val Gln Leu Ile Leu Pro Ser Asn Ala Leu Pro Cys Phe
70                      75                  80                  85
TAT GTT ATT CTC TCT GTA AAG GCT GCT ATT TTC ATT TTT GAC GTT AAA        342
Tyr Val Ile Leu Ser Val Lys Ala Ala Ile Phe Ile Phe Asp Val Lys
                 90                      95                  100
CAA AAA ATC GTT TCT TAT TTG GAT TGG GAT AAA GGT GGA GGC TCA GGC        390
Gln Lys Ile Val Ser Tyr Leu Asp Trp Asp Lys Gly Gly Gly Ser Gly
             105                     110                 115
GGA TCGGCCAAGT CGGCCATCCC ATATCACGCG GCCGCGGATC C                      434
Gly


        <210>  18
        <211>  6
        <212>  PRT
        <213>


        <400>  18


Gly Gly Gly Ser Gly Gly
 1               5


        <210>  19
        <211>  425
        <212>  DNA
        <213> Ancyclostoma ceylanicum


        <220>
        <221>  CDS
        <222>  (10)..(282)


        <220>
        <221>  "W" stands for A or T
        <223>


        <400>  19


GAATTCCGG CTG GTW TCC TAC TGC AGT GGA AAA GCA ACG ATG CAG TGT GGT     51
          Leu Val Ser Tyr Cys Ser Gly Lys Ala Thr Met Gln Cys Gly
           1               5                       10
GAG AAT GAA AAG TAC GAT TCG TGC GGT AGC AAG GAG TGC GAT AAG AAG        99
Glu Asn Glu Lys Tyr Asp Ser Cys Gly Ser Lys Glu Cys Asp Lys Lys
15                      20                  25                  30
TGC AAA TAT GAC GGA GTT GAG GAG GAA GAC GAC GAG GAA CCT AAT GTG       147
Cys Lys Tyr Asp Gly Val Glu Glu Glu Asp Asp Glu Glu Pro Asn Val
                 35                      40                  45
CCA TGC CTA GTA CGT GTG TGT CAT CAA GAT TGC GTA TGC GAA GAA GGA       195
Pro Cys Leu Val Arg Val Cys His Gln Asp Cys Val Cys Glu Glu Gly
             50                      55                  60
TTC TAT AGA AAC AAA GAT GAC AAA TGT GTA TCA GCA GAA GAG TGC GAA       243
Phe Tyr Arg Asn Lys Asp Asp Lys Cys Val Ser Ala Glu Asp Cys Glu
```

```
                65                     70                     75
         CTT GAC AAT ATG GAC TTT ATA TAT CCC GGA ACT CGA AAC TGAACGAAGG CTC        295
         Leu Asp Asn Met Asp Phe Ile Tyr Pro Gly Thr Arg Asn
               80                     85                     90
         CATTCTTGCT GCACAAGATC GATTGTCTCT CCCCTGCATC TCAGTAGTTT TGCTACATTG        355

         TATATGGTAG CAAAAAATTA GCTTAGGGAG AATAAAATCT TTACCTATAT TTAATCAATG        415

         AAGTATTCTC TTTCT                                                         430
```

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        <210>   20
        <211>   100
        <212>   PRT
        <213>   Ancyclostoma caninum


        <400>   18

Met Lys Met Leu Tyr Ala Ile Ala Ile Met Phe Leu Leu Val Ser Leu
 1                   5                  10                  15
Cys Ser Ala Arg Thr Val Arg Lys Ala Tyr Pro Glu Cys Gly Glu Asn
              20                  25                  30
Glu Trp Leu Asp Asp Cys Gly Thr Gln Lys Pro Cys Glu Ala Lys Cys
          35                  40                  45
Asn Glu Glu Pro Pro Glu Glu Glu Asp Pro Ile Cys Arg Ser Arg Gly
     50                  55                  60
Cys Leu Leu Pro Pro Ala Cys Val Cys Lys Asp Gly Phe Tyr Arg Asp
 65                  70                  75                  80
Thr Val Ile Gly Asp Cys Val Arg Glu Glu Glu Cys Asp Gln His Glu
              85                  90                  95
Ile Ile His Val
             100


        <210>   21
        <211>   98
        <212>   PRT
        <213>   Ancyclostoma caninum


        <400>   21

Met Lys Met Leu Tyr Ala Ile Ala Ile Met Phe Leu Leu Val Ser Leu
 1                   5                  10                  15
Cys Ser Thr Arg Thr Val Arg Lys Ala Tyr Pro Glu Cys Gly Glu Asn
              20                  25                  30
Glu Trp Leu Asp Val Cys Gly Thr Lys Lys Pro Cys Glu Ala Lys Cys
          35                  40                  45
Ser Glu Glu Glu Glu Glu Asp Pro Ile Cys Arg Ser Phe Ser Cys Pro
     50                  55                  60
Gly Pro Ala Ala Cys Val Cys Glu Asp Gly Phe Tyr Arg Asp Thr Val
 65                  70                  75                  80
Ile Gly Asp Cys Val Lys Glu Glu Glu Cys Asp Gln His Glu Ile Ile
              85                  90                  95
His Val


        <210>   22
        <211>   94
        <212>   PRT
        <213>   Ancyclostoma ceylanicum
```

<400> 22

```
Met Arg Thr Leu Tyr Leu Ile Ser Ile Trp Leu Phe Leu Ile Ser Gln
1               5                   10                  15
Cys Asn Gly Lys Ala Phe Pro Lys Cys Asp Val Asn Glu Arg Phe Glu
            20                  25                  30
Val Cys Gly Asn Leu Lys Glu Cys Glu Leu Lys Cys Asp Glu Asp Pro
        35                  40                  45
Lys Ile Cys Ser Arg Ala Cys Ile Arg Pro Pro Ala Cys Val Cys Asp
    50                  55                  60
Asp Gly Phe Tyr Arg Asp Lys Tyr Gly Phe Cys Val Glu Glu Asp Glu
65                  70                  75                  80
Cys Asn Asp Met Glu Ile Ile Thr Phe Pro Pro Glu Thr Lys
                85                  90
```

```
<210>  23
<211>  96
<212>  PRT
<213>  Ancyclostoma ceylanicum
```

<400> 23

```
Met Ser Thr Leu Tyr Val Ile Ala Ile Cys Leu Leu Leu Val Ser Gln
1               5                   10                  15
Cys Asn Gly Arg Thr Val Lys Lys Cys Gly Lys Asn Glu Arg Tyr Asp
            20                  25                  30
Asp Cys Gly Asn Ala Lys Asp Cys Glu Thr Lys Cys Gly Glu Glu Glu
        35                  40                  45
Lys Val Cys Arg Ser Arg Glu Cys Thr Ser Pro Gly Ala Cys Val Cys
    50                  55                  60
Glu Gln Gly Phe Tyr Arg Asp Pro Ala Gly Asp Cys Val Thr Asp Glu
65                  70                  75                  80
Glu Cys Asp Glu Trp Asn Asn Met Glu Ile Ile Thr Met Pro Lys Gln
                85                  90                  95
```

```
<210>  23
<211>  96
<212>  PRT
<213>  Ancyclostoma ceylanicum
```

<400> 23

```
<210>  24
<211>  108
<212>  PRT
<213>  Ancyclostoma ceylanicum
```

<400> 24

```
Met Ala Val Leu Tyr Ser Val Ala Ile Ala Leu Leu Leu Val Ser Gln
1               5                   10                  15
Cys Ser Gly Lys Pro Asn Asn Val Met Thr Asn Ala Cys Gly Leu Asn
            20                  25                  30
Glu Tyr Phe Ala Glu Cys Gly Asn Met Lys Glu Cys Glu His Arg Cys
        35                  40                  45
Asn Glu Glu Glu Asn Glu Glu Arg Asp Glu Glu Arg Ile Thr Ala Cys
```

```
        50                      55                      60
Leu Ile Arg Val Cys Phe Arg Pro Gly Ala Cys Val Cys Lys Asp Gly
65                      70                      75                      80
Phe Tyr Arg Asn Arg Thr Gly Ser Cys Val Glu Glu Asp Asp Cys Glu
                        85                      90                      95
Tyr Glu Asn Met Glu Phe Ile Thr Phe Ala Pro Glu
                100                     105


        <210>   25
        <211>   82
        <212>   PRT
        <213>   Ancyclostoma ceylanicum

        <400>   25

Val Pro Ile Cys Gly Ser Asn Glu Arg Tyr Ser Asp Cys Gly Asn Asp
1                       5                       10                      15
Lys Gln Cys Glu Arg Lys Cys Asn Glu Asp Asp Tyr Glu Lys Gly Asp
                20                      25                      30
Glu Ala Cys Arg Ser His Val Cys Glu Arg Pro Gly Ala Cys Val Cys
            35                      40                      45
Glu Asp Gly Phe Tyr Arg Asn Lys Lys Gly Ser Cys Val Glu Ser Asp
        50                      55                      60
Asp Cys Glu Tyr Asp Asn Met Asp Phe Ile Thr Phe Ala Pro Glu Thr
65                      70                      75                      80
Ser Arg


        <210>   26
        <211>   75
        <212>   PRT
        <213>   Ancyclostoma duodenale

        <400>   26

Lys Cys Pro Thr Asp Glu Trp Phe Asp Trp Cys Gly Thr Tyr Lys His
1                       5                       10                      15
Cys Glu Leu Lys Cys Asp Arg Glu Leu Thr Glu Glu Glu Gln Ala Cys
                20                      25                      30
Leu Ser Arg Val Cys Glu Lys Ser Ala Cys Val Cys Asn Asp Gly Leu
            35                      40                      45
Tyr Arg Asp Lys Phe Gly Asn Cys Val Glu Lys Asp Glu Cys Asn Asp
        50                      55                      60
Met Glu Ile Ile Thr Phe Ala Pro Glu Thr Lys
65                      70                      75


        <210>   27
        <211>   102
        <212>   PRT
        <213>   Ancyclostoma duodenale

        <400>   27

Met Arg Met Leu Tyr Leu Val Pro Ile Trp Leu Leu Leu Ile Ser Leu
1                       5                       10                      15
Cys Ser Gly Lys Ala Ala Lys Lys Cys Gly Leu Asn Glu Arg Leu Asp
                20                      25                      30
Cys Gly Asn Leu Lys Gln Cys Glu Pro Lys Cys Ser Asp Leu Glu Ser
```

```
              35                      40                      45
Glu Glu Tyr Glu Glu Glu Asp Glu Ser Lys Cys Arg Ser Arg Glu Cys
          50                      55                      60
Ser Arg Arg Val Cys Val Cys Asp Glu gly Phe Tyr Arg Asn Lys Lys
65                      70                      75                      80
Gly Lys Cys Val Ala Lys Asp Val Cys Glu Asp Asp Asn Met Glu Ile
                      85                      90                      95
Ile Thr Phe Pro Pro Glu
                  100


        <210>   28
        <211>   78
        <212>   PRT
        <213>   Ancyclostoma duodenale


        <400>   28


Asp Glu Cys Gly Pro Asp Glu Trp Phe Asp Tyr Cys Gly Asn Tyr Lys
  1                   5                      10                      15
Lys Cys Glu Arg Lys Cys Ser Glu Glu Thr Ser Glu Lys Asn Glu Glu
                  20                      25                      30
Ala Cys Leu Ser Arg Ala Cys Thr Gly Arg Ala Cys Val Cys Lys Asp
          35                      40                      45
Gly Leu Tyr Arg Asp Asp Phe Gly Asn Cys Val Pro His Asp Glu Cys
          50                      55                      60
Asn Asp Met Glu Ile Ile Thr Phe Pro Pro Glu Thr Lys His
65                      70                      75


        <210>   29
        <211>   76
        <212>   PRT
        <213>   Helogmosomoides polygyrus


        <400>   29


Met Ile Arg Lys Leu Val Leu Leu Thr Ala Ile Val Thr Val Val Leu
  1                   5                      10                      15
Ser Ala Lys Thr Cys Gly Pro Asn Glu Glu Tyr Thr Glu Cys Gly Thr
                  20                      25                      30
Pro Cys Glu Pro Lys Cys Asn Glu Pro Met Pro Asp Ile Cys Thr Len
          35                      40                      45
Asn Cys Ile Val Asn Val Cys Gln Cys Lys Pro Gly Phe Lys Arg Gly
      50                      55                      60
Pro Lys Gly Cys Val Ala Pro Gly Pro Gly Cys Lys
65                      70                      75


        <210>   30
        <211>   187
        <212>   DNA
        <213>


        <400>   30


TTATTCGAAA CGATGTTCTC TCCAATTTTG TCCTTGGAAA TTATTTTAGC TACTTTGCAA          60

TCTGTCTTCG CCCAGCCAGT TATCTCCACT ACCGTTGGTT CCGCTGCCGA GGGTTCTTTG          120
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GACAAGAGGC CTATCCGCGG AATTCAGATC TGAATGCGGC CGCTCGAGAC TAGTGGATCC   180

TTAGACA   187

        <210> 31
        <211> 495
        <212> DNA
        <213> Ancyclostoma caninum

        <220>
        <221> CDS
        <222> (36)..(356)

        <220>
        <221> misc_feature
        <223>

        <400> 31

GAATTCCGCG GAATTCCGCT TGCTACTACT CAACG ATG AAG ACG CTC TAT ATT   53
                                        Met Lys Thr Leu Tyr Ile
                                         1   5
GTC GCT ATA TGC TCG CTC CTC ATT TCG CTG TGT ACT GGA AAA CCT TCG   101
Val Ala Ile Cys Ser Leu Leu Ile Ser Leu Cys Thr Gly Lys Pro Ser
         10   15   20
GAG AAA GAA TGT GGT CCC CAT GAA AGA CTC GAC TGT GGC AAC AAG AAG   149
Glu Lys Glu Cys Gly Pro His Glu Arg Leu Asp Cys Gly Asn Lys Lys
     25   30   35
CCA TGC GAG CGC AAG TGC AAA ATA GAG ACA AGT GAG GAG GAG GAT GAC   197
Pro Cys Glu Arg Lys Cys Lys Ile Glu Thr Ser Glu Glu Glu Asp Asp
     40   45   50
TAC GAA GAG GGA ACC GAA CGT TTT CGA TGC CTC TTA CGT GTG TGT GAT   245
Tyr Glu Glu Gly Thr Glu Arg Phe Arg Cys Leu Leu Arg Val Cys Asp
55   60   65   70
CAG CCT TAT GAA TGC ATA TGC GAT GAT GGA TAC TAC AGA AAC AAG AAR   293
Gln Pro Tyr Glu Cys Ile Cys Asp Asp Gly Tyr Tyr Arg Asn Lys Lys
                 75   80   85
GGC GAA TGT GTG ACT GAT GAT GTA TGC CAG GAA GAC TTT ATG GAG TTT   341
Gly Glu Cys Val Thr Asp Asp Val Cys Gln Glu Asp Phe Met Glu Phe
             90   95   100
ATT ACT TTC GCA CCA TAAACCCAAT AATGACCAAT GACTCCCATT CTTCGTGATC AG   398
Ile Thr Phe Ala Pro
         105

CGTCGGTGGT TGACAGTCTC CCCTACATCT TAGTAGTTTT GCTTGATAAT GTATACATAA   458

ACTGTACTTT CTGAGATAGA ATAAAGCTCT CAACTAC   495

        <210> 32
        <211> 478
        <212> DNA
        <213> Ancyclostoma caninum

        <220>
        <221> CDS
        <222> (24)..(341)

70016337v1

<220>
<221> misc_feature
<223>

<400> 32

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GAATTCCGCG GAATTCCGCA ACG ATG AAG ACG CTC TAT ATT ATC GCT ATA TGC          53
                          Met Lys Thr Leu Tyr Ile Ile Ala Ile Cys
                           1               5                  10
TCG CTC CTC ATT TCG TTG TGT ACT GGA AGA CCG GAA AAA AAG TGC GGT            101
Ser Leu Leu Ile Ser Leu Cys Thr Gly Arg Pro Glu Lys Lys Cys Gly
             15                  20                  25
CCC GGT GAA AGA CTC GCC TGT GGC AAT AAG AAG CCA TGC GAG CGC AAG           149
Pro Gly Glu Arg Leu Ala Cys Gly Asn Lys Lys Pro Cys Glu Arg Lys
             30                  35                  40
TGC AAA ATA GAG AGA AGT GAG GAG GAG GAT GAC TAC CCA GAG GGA ACC           197
Cys Lys Ile Glu Thr Ser Glu Glu Glu Asp Asp Tyr Pro Glu Gly Thr
         45                  50                  55
GAA CGT TTT CGA TGC CTC TTA CGT GTG TGT GAT CAG CCT TAT GAA TGC           245
Glu Arg Phe Arg Cys Leu Leu Arg Val Cys Asp Gln Pro Tyr Glu Cys
     60                  65                  70
ATA TGC GAT GAT GGA TAC TAC AGA AAC AAG AAA GGC GAA TGT GTG ACT           293
Ile Cys Asp Asp Gly Tyr Tyr Arg Asn Lys Lys Gly Glu Cys Val Thr
 75                  80                  85                  90
GAT GAT GTA TGC CAG GAA GAC TTT ATG GAG TTT ATT ACT TTC GCA CCA           341
Asp Asp Val Cys Gln Glu Asp Phe Met Glu Phe Ile Thr Phe Ala Pro
                 95                  100                 105

TAAACCCAAT AATGACCACT GGCTCCCATT CTTCGTGACC AGCGTCGGTG GTTGACAGTC         401

TCCCCTGCAT CTTAGTAGTT TTGCTTGATA ATGTATCCAT AAACAGTACT TTCTGAGATA         461

GAATAAAGCT CTCAACT                                                        478
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<210> 33
<211> 472
<212> DNA
<213> Ancyclostoma caninum

<220>
<221> CDS
<222> (21)..(335)

<220>
<221> misc_feature
<223>

<400> 33

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GAATTCCGTA CTACTCAACG ATG AAG ACG CTC TAT ATT ATC GCT ATA TGC            50
                         Met Lys Thr Leu Tyr Ile Ile Ala Ile Cys
                          1               5                  10
TCG CTG CTC TTT TCA CTG TGT ACT GGA AGA CCG GAA AAA AAG TGC GGT           98
Ser Leu Leu Phe Ser Leu Cys Thr Gly Arg Pro Glu Lys Lys Cys Gly
             15                  20                  25
```

```
CCC GGT GAA AGA CTC GAC TGT GCC AAC AAG AAG CCA TGC GAG CCC AAG          146
Pro Gly Glu Arg Leu Asp Cys Ala Asn Lys Lys Pro Cys Glu Pro Lys
            30                      35                      40
TGC AAA ATA GAG ACA AGT GAG GAG GAG GAT GAC GAC GTA GAG GAT ACC          194
Cys Lys Ile Glu Thr Ser Glu Glu Glu Asp Asp Asp Val Glu Asp Thr
            45                      50                      55
GAT GTG AGA TGC CTC GTA CGT GTG TGT GAA CGT CCT CTT AAA TGC ATA          242
Asp Val Arg Cys Leu Val Arg Val Cys Glu Arg Pro Leu Lys Cys Ile
            60                      65                      70
TGC AAG GAT GGA TAC TAC AGA AAC AAG AAA GGC GAA TGT GTG ACT GAT          290
Cys Lys Asp Gly Tyr Tyr Arg Asn Lys Lys Gly Glu Cys Val Thr Asp
        75                      80                      85                      90
GAT GTA TGC CAG GAA GAC TTT ATG GAG TTT ATT ACT TTC GCA CCA TAAACC       341
Asp Val Cys Gln Glu Asp Phe Met Glu Phe Ile Thr Phe Ala Pro
                    95                      100                     105

CAATAATGAC CACTGGCTCC CATTCTTCGT GATCAGCGTC GGTGGTTGAC AGTCTCCCCT         401

GCATCTTAGT TGCTTTGCTT GATAATCTAT ACATAAACAG TACTTTCTGA GATAGAATAA         461

AGCTCTCAAC T                                                             472

        <210> 34
        <211> 487
        <212>  DNA
        <213>  Ancyclostoma caninum

        <220>
        <221>  CDS
        <222>  (57)..(347)

        <220>
        <221>  misc_feature
        <223>

        <400>  34

GAATTCCGGA CTTACTAGTA CTCAGCGAAT CAAATACGAC TTACTACTAC TCAACG ATG        59
                                                                 Met
                                                                 1
AAG ACG CTC TCT GCT ATC CCT ATA ATG CTG CTC CTG GTA TCG CAA TGC          107
Lys Thr Leu Ser Ala Ile Pro Ile Met Leu Leu Leu Val Ser Gln Cys
            5                       10                      15
AGT GGA AAA TCA CTG TGG GAT CAG AAG TGT GGT GAG AAT GAA AGG CTC          155
Ser Gly Lys Ser Leu Trp Asp Gln Lys Cys Gly Glu Asn Glu Arg Leu
            20                      25                      30
GAC TGT GGC AAT CAG AAG GAC TGT GAG CGC AAG TGC GAT GAT AAA AGA          203
Asp Cys Gly Asn Gln Lys Asp Cys Glu Arg Lys Cys Asp Asp Lys Arg
        35                      40                      45
AGT GAA GAA GAA ATT ATG CAG GCA TGT CTC ACA CGT CAA TGT CTT CCT          251
Ser Glu Glu Glu Ile Met Gln Ala Cys Leu Thr Arg Gln Cys Leu Pro
50                      55                      60                      65
CCT GTT TGC GTA TGT GAA GAT GGA TTC TAC AGA AAT GAC AAC GAC CAA          299
Pro Val Cys Val Cys Glu Asp Gly Phe Tyr Arg Asn Asp Asn Asp Gln
                    70                      75                      80
TGT GTT GAT GAA GAA GAA TGC AAT ATG GAG TTT ATT ACT TTC GCR CCA TG       349
Cys Val Asp Glu Glu Glu Cys Asn Met Glu Phe Ile Thr Phe Ala Pro
```

AAGCAAATGA CAGCCGATGG TTTGGACTCT CGCTACAGAT CACAGCTTTA CTGTTTCCCT   409

TGCATCATAG TAGTTTTGCT AGATAGTGTA TATATTAGCA TGATTTTCTG ATAGGGAGAA   469

TAAAGCTTTC CAATTTTC   487

        \<210> 35
        \<211> 477
        \<212> DNA
        \<213> Ancyclostoma caninum

        \<220>
        \<221> CDS
        \<222> (24)..(338)

        \<220>
        \<221> misc_feature
        \<223>

        \<400> 35

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GAATTCCGCG GAATTCCGCA ACG ATG AAG ACG CTC TAT ATT ATC GCT ATA TGC          53
                          Met Lys Thr Leu Tyr Ile Ile Ala Ile Cys
                           1               5                  10
TCG CTC CTC ATT TCG CTG TGT ACT GGA AGA CCG GAA AAA AAG TGC GGT            101
Ser Leu Leu Ile Ser Leu Cys Thr Gly Arg Pro Glu Lys Lys Cys Gly
                 15              20              25
CCC GGT GAA AGA CTC GAC TGT GCC AAC AAG AAG CCA TGC GAG CCC AAG           149
Pro Gly Glu Arg Leu Asp Cys Ala Asn Lys Lys Pro Cys Glu Pro Lys
            30              35              40
TGC AAA ATA GAG ACA AGT GAG GAG GAG GAT GAC GAC GTA GAG GAA ACC           197
Cys Lys Ile Glu Thr Ser Glu Glu Glu Asp Asp Asp Val Glu Glu Thr
            45              50              55
GAT GTG AGA TGC CTC GTA CGT GTG TGT GAA CGG CCT CTT AAA TGC ATA           245
Asp Val Arg Cys Leu Val Arg Val Cys Glu Arg Pro Leu Lys Cys Ile
            60              65              70
TGC AAG GAT GGA TAC TAC AGA AAC AAG AAA GGC GAA TGT GTG ACT GAT           293
Cys Lys Asp Gly Tyr Tyr Arg Asn Lys Lys Gly Glu Cys Val Thr Asp
75              80              85              90
GAT GTA TGC CAG GAA GAC TTT ATG GAG TTT ATT ACT TTC GCA CCA TAAACC        344
Asp Val Cys Gln Glu Asp Phe Met Glu Phe Ile Thr Phe Ala Pro
                95              100             105
```

CAATAATGAC CACTGGCTCC CATTCTTCGT GATCAGCGTC GGTGGTTGAC AGTCTCCCCT   404

GCATCTTAGT TGCTTTGCTT GATAATCTAT ACATAAACAG TACTTTCTGA GATAGAATAA   464

AGCTCTCAAC TAC   477

        \<210> 36
        \<211> 686
        \<212> DNA
        \<213> Ancyclostoma caninum

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AATTCCGGA AAA ATG CTG ATG CTC TAC CTT GTT CCT ATC TGG TTG CTA          49
          Met Leu Met Leu Tyr Leu Val Pro Ile Trp Leu Leu
          1               5                   10
CTC ATT TCG CAA TGC AGT GGA AAA TCC GCG AAG AAA TGT GGT CTC AAT         97
Leu Ile Ser Gln Cys Ser Gly Lys Ser Ala Lys Lys Cys Gly Leu Asn
        15              20                  25
GAA AAA TTG GAC TGT GGC AAT CTG AAG GCA TGC GAG AAA AAG TGC AGC        145
Glu Lys Leu Asp Cys Gly Asn Leu Lys Ala Cys Glu Lys Lys Cys Ser
    30              35                  40
GAC TTG GAC AAT GAG GAG GAT TAT AAG GAG GAA GAT GAG TCG AAA TGC        193
Asp Leu Asp Asn Glu Glu Asp Tyr Lys Glu Glu Asp Glu Ser Lys Cys
45              50                  55                  60
CGA TCA CGT GAA TGT AGT CGT CGT GTT TGT GTA TGC GAT GAA GGA TTC        241
Arg Ser Arg Glu Cys Ser Arg Arg Val Cys Val Cys Asp Glu Gly Phe
            65                  70
TAC AGA AAC AAG AAG GGC CAA TGT GTG ACA AGA GAT GAT TGC GAG TAT        289
Tyr Arg Asn Lys Lys Gly Gln Cys Val Thr Arg Asp Asp Cys Glu Tyr
        80                  85                  90
GAC AAT ATG GAG ATT ATC ACT TTT CCA CCA GAA GAT AAA TGT GGT CCC        337
Asp Asn Met Glu Ile Ile Thr Phe Pro Pro Glu Asp Lys Cys Gly Pro
        95                  100                 101
GAT GAA TGG TTC GAC TGG TGT GGA ACT TAC AAG CAG TGT GAG CGC AAG        385
Asp Glu Trp Phe Asp Trp Cys Gly Thr Tyr Lys Gln Cys Glu Arg Lys
    110                 115                 120
TGC AAT AAG GAG CTA AGT GAG AAA GAT GAA GAG GCA TGC CTC TCA CGT        433
Cys Asn Lys Glu Leu Ser Glu Lys Asp Glu Glu Ala Cys Leu Ser Arg
125                 130                 135
GCT TGT ACT GGT CGT GCT TGT GTT TGC AAC GAC GGA CTG TAC AGA GAC        481
Ala Cys Thr Gly Arg Ala Cys Val Cys Asn Asp Gly Leu Tyr Arg Asp
            145                 150                 155
GAT TTT GGC AAT TGT GTT GAG AAA GAC GAA TGT AAC GAT ATG GAG ATT        529
Asp Phe Gly Asn Cys Val Glu Lys Asp Glu Cys Asn Asp Met Glu Ile
            160                 165                 170
ATC ACT TTT CCA CCG GAA ACC AAA CAC TGACCAAAGG CTCTAACTCT CGCTACAT     584
Ile Thr Phe Pro Pro Glu Thr Lys His
        175                 180

AACGTCAGTG CTTGAATTGC CCCTTTACGA GTTAGTAATT TTGACTAACT CTGTGTAATT      644

GAGCATTGTC TACTGATGGT GAAAATGAAG TGTTCAATGT CT                         686
```

```
GAATTCCGCG GAATTCCGGT TGGCGGCAGA AAA ATG CTG ATG CTC TAC CTT GTT          54
                                       Met Leu Met Leu Tyr Leu Val
                                        1               5
CCT ATC TGG TTC CTG CTC ATT TCG CAA TGC AGT GGA AAA TCC GCG AAG          102
Pro Ile Trp Phe Leu Leu Ile Ser Gln Cys Ser Gly Lys Ser Ala Lys
        10              15                  20
AAA TGT GGC CTC AAT GAA AAA TTG GAC TGT GGC AAT CTG AAG GCA TGC          150
Lys Cys Gly Leu Asn Glu Lys Leu Asp Cys Gly Asn Leu Lys Ala Cys
    25              30                  35
GAG AAA AAG TGC AGC GAC TTG GAC AAT GAG GAG GAT TAT GGG GAG GAA          198
Glu Lys Lys Cys Ser Asp Leu Asp Asn Glu Glu Asp Tyr Gly Glu Glu
40                  45              50                  55
GAT GAG TCG AAA TGC CGA TCA CGT GAA TGT ATT GGT CGT GTT TGC GTA          246
Asp Glu Ser Lys Cys Arg Ser Arg Glu Cys Ile Gly Arg Val Cys Val
                60                  65                  70
TGC GAT GAA GGA TTC TAC AGA AAC AAG AAG GGC CAA TGT GTG ACA AGA          294
Cys Asp Glu Gly Phe Tyr Arg Asn Lys Lys Gly Gln Cys Val Thr Arg
                75                  80                  85
GAC GAT TGC GAG TAT GAC AAT ATG GAG ATT ATC ACT TTT CCA CCA GAA          342
Asp Asp Cys Glu Tyr Asp Asn Met Glu Ile Ile Thr Phe Pro Pro Glu
                90                  95              100
GAT AAA TGT GGT CCC GAT GAA TGG TTC GAC TGG TGT GGA ACT TAC AAG          390
Asp Lys Cys Gly Pro Asp Glu Trp Phe Asp Trp Cys Gly Thr Tyr Lys
        105             110                 115
CAG TGT GAG CGC AAG TGC AGT GAG GAG CTA AOT GAG AAA AAT GAG GAG          438
Gln Cys Glu Arg Lys Cys Ser Glu Glu Leu Ser Glu Lys Asn Glu Glu
120                 125                 130                 135
GCA TGC CTC TCA CGT GCT TGT ACT GGT CGT GCT TGC GTT TGC AAC GAC          486
Ala Cys Leu Ser Arg Ala Cys Thr Gly Arg Ala Cys Val Cys Asn Asp
                140                 145                 150
GGA TTG TAT AGA GAC GAT TTT GGC AAT TGT GTT GAG AAA GAC GAA TGT          534
Gly Leu Tyr Arg Asp Asp Phe Gly Asn Cys Val Glu Lys Asp Glu Cys
                155                 160                 165
AAC GAT ATG GAG ATT ATC ACT TTT CCA CCG GAA ACC AAA CAC TGACCAAAGG      586
Asn Asp Met Glu Ile Ile Thr Phe Pro Pro Glu TSr Lys His
                170                 175                 180

CTCTAGCTCT CGCTACATAA CGTCAGTGCT TGAATTGTCC CTTTACGTGT TAGTAATTTT         646

GACTAACTCT GTGTATTTGA GCATTGTCTA CTAATGGTGA AAATGAAGCT TTTCAATGAC         706

T                                                                        707
```

```
GAATTCCGTA CGACCTACTA CTACTCAACG ATG AAG GCG CTC TAT GTT ATC TCT        54
                                 Met Lys Ala Leu Tyr Val Ile Ser
                                  1               5
ATA ACG TTG CTC CTG GTA TGG CAA TGC AGT GCA AGA ACA GCG AGG AAA        102
Ile Thr Leu Leu Leu Val Trp Gln Cys Ser Ala Arg Thr Ala Arg Lys
     10                  15                  20
CCC CCA ACG TGT GGT GAA AAT GAA AGG GTC GAA TGG TGT GGC AAG CAG        150
Pro Pro Thr Cys Gly Glu Asn Glu Arg Val Glu Trp Cys Gly Lys Gln
 25                  30                  35                  40
TGC GAG ATC ACA TGT GAC GAC CCA GAT AAG ATA TGC CGC TCA CTC GCT        198
Cys Glu Ile Thr Cys Asp Asp Pro Asp Lys Ile Cys Arg Ser Leu Ala
                 45                  50                  55
TGT CCT GGT CCT CCT GCT TGC GTA TGC GAC GAC GGA TAC TAC AGA GAC        246
Cys Pro Gly Pro Pro Ala Cys Val Cys Asp Asp Gly Tyr Tyr Arg Asp
             60                  65                  70
ACG AAC GTT GGC TTG TGT GTA CAA TAT GAC GAA TGC AAC GAT ATG GAT        294
Thr Asn Val Gly Leu Cys Val Gln Tyr Asp Glu Cys Asn Asp Met Asp
         75                  80                  85
ATT ATT ATG GTT TCA TAGGGTTGAC TGAAGAATCG AACAACCGGT GCACAACTTC        349
Ile Ile Met Val Ser
     90

TATGCTTGAC TATCTCTCTT GCATCATGCA AGTTTAGCTA GATAGTGTAT ATATTAGCAA      409

GACCCCTTGG GGAGAATGAA GCTTCCCAAC TATATTAAAT CAATAACGTT TTCGCTTCAT      469

GTACACGTGC TCAGCACATT CATATCCACT CCTCACACTC CATGAAAGCA GTGAAATGTT      529
```

```
GCCAACTCTT CGAAC ATG ATT CGA GGC CTC GTT CTT CTT TCT CTC CTG TTT        51
```

```
                    Met Ile Arg Gly Leu Val Leu Leu Ser Leu Leu Phe
                     1               5                  10
TGC GTC ACT TTT GCA GCG AAG AGA GAT TGT CCA GCA AAT GAG GAA TGG            99
Cys Val Thr Phe Ala Ala Lys Arg Asp Cys Pro Ala Asn Glu Glu Trp
          15                  20                  25
AGG GAA TGT GGC ACT CCA TGT GAA CCA AAA TGC AAT CAA CCG ATG CCA          147
Arg Glu Cys Gly Thr Pro Cys Glu Pro Lys Cys Asn Gln Pro Met Pro
      30                  35                  40
GAT ATA TGT ACT ATG AAT TGT ATC GTC GAT GTG TGT CAA TGC AAG GAG          195
Asp Ile Cys Thr Met Asn Cys Ile Val Asp Val Cys Gln Cys Lys Glu
45                  50                  55                  60
GGA TAC AAG CGT CAT GAA ACG AAG GGA TGC TTA AAG GAA GGA TCA GCT          243
Gly Tyr Lys Arg His Glu Thr Lys Gly Cys Leu Lys Glu Gly Ser Ala
              65                  70                  75
GAT TGT AAA TAAGTTATCA GAACGCTCGT TTTGTCTTAC ATTAGATGGG TGAGCTGATG       302
Asp Cys Lys

TATCTGTCAG ATAAACTCTT TCTTCTAAAA AAAAAAAAAA AAAAAAAAAA AAAAAAAA           361


        <210> 40
        <211> 77
        <212>  PRT
        <213>  Ancyclostoma caninum


        <220>
        <221>  misc_feature
        <223>


        <400>  40

Lys Ala Tyr Pro Glu Cys Gly Glu Asn Glu Trp Leu Asp Asp Cys Gly
 1               5                  10                  15
Thr Gln Lys Pro Cys Glu Ala Lys Cys Asn Glu Glu Pro Pro Glu Glu
          20                  25                  30
Glu Asp Pro Ile Cys Arg Ser Arg Gly Cys Leu Leu Pro Pro Ala Cys
          35                  40                  45
Val Cys Lys Asp Gly Phe Tyr Arg Asp Thr Val Ile Gly Asp Cys Val
    50                  55                  60
Arg Glu Glu Glu Cys Asp Glu His Glu Ile Ile His Val
65                  70                  75


        <210> 41
        <211> 75
        <212>  PRT
        <213>  Ancyclostoma caninum


        <220>
        <221>  misc_feature
        <223>


        <400>  41

Lys Ala Tyr Pro Glu Cys Gly Glu Asn Glu Trp Leu Asp Val Cys Gly
```

```
1                 5              10                        15
Thr Lys Lys Pro Cys Glu Ala Lys Cys Ser Glu Glu Glu Glu Asp
            20                  25              30
Pro Ile Cys Arg Ser Phe Ser Cys Pro Gly Pro Ala Ala Cys Val Cys
        35                  40              45
Glu Asp Gly Phe Tyr Arg Asp Thr Val Ile Gly Asp Cys Val Lys Glu
        50                  55              60
Glu Glu Cys Asp Gln His Glu Ile Ile His Val
65                  70                  75


        <210> 42
        <211> 74
        <212>  PRT
        <213>  Ancyclostoma caninum


        <220>
        <221>  misc_feature
        <223>


        <400>  42


Arg Thr Ala Arg Lys Pro Pro Thr Cys Gly Glu Asn Glu Arg Val Glu
1                 5                       10                  15
Trp Cys Gly Lys Glu Cys Glu Ile Thr Cys Asp Asp Pro Asp Lys Ile
            20                  25              30
Cys Arg Ser Leu Ala Cys Pro Gly Pro Pro Ala Cys Val Cys Asp Asp
        35                  40              45
Gly Tyr Tyr Arg Asp Thr Asn Val Gly Leu Cys Val Gln Tyr Asp Glu
        50                  55              60
Cys Asn Asp Met Asp Ile Ile Met Val Ser
65                  70


        <210> 43
        <211> 88
        <212>  PRT
        <213>  Ancyclostoma caninum


        <220>
        <221>  misc_feature
        <223>


        <400>  43


Lys Pro Ser Glu Lys Glu Cys Gly Pro His Glu Arg Leu Asp Cys Gly
1                 5                       10                  15
Asn Lys Lys Pro Cys Glu Arg Lys Cys Lys Ile Glu Thr Ser Glu Glu
            20                  25              30
Glu Asp Asp Tyr Glu Glu Gly Thr Glu Arg Phe Arg Cys Leu Leu Arg
        35                  40              45
Val Cys Asp Glu Pro Tyr Glu Cys Ile Cys Asp Asp Gly Tyr Tyr Arg
        50                  55              60
Asn Lys Lys Gly Glu Cys Val Thr Asp Asp Val Cys Glu Glu Asp Phe
65                  70                  75                  80
Met Glu Phe Ile Thr Phe Ala Pro
                  85
```

<210> 44
<211> 87
<212> PRT
<213> Ancyclostoma caninum

<220>
<221> misc_feature
<223>

<400> 44

Arg Pro Glu Lys Lys Cys Gly Pro Gly Glu Arg Leu Ala Cys Gly Asn
1   5   10   15
Lys Lys Pro Cys Glu Arg Lys Cys Lys Ile Glu Thr Ser Glu Glu Glu
            20   25   30
Asp Asp Tyr Pro Glu Gly Thr Glu Arg Phe Arg Cys Leu Leu Arg Val
        35   40   45
Cys Asp Gln Pro Tyr Glu Cys Ile Cys Asp Asp Gly Tyr Tyr Arg Asn
    50   55   60
Lys Lys Gly Glu Cys Val Thr Asp Asp Val Cys Gln Glu Asp Phe Met
65   70   75   80
Glu Phe Ile Thr Phe Ala Pro
                85

<210> 45
<211> 86
<212> PRT
<213> Ancyclostoma caninum

<220>
<221> misc_feature
<223>

<400> 45

Arg Pro Glu Lys Lys Cys Gly Pro Gly Glu Arg Leu Asp Cys Ala Asn
1   5   10   15
Lys Lys Pro Cys Glu Pro Lys Cys Lys Ile Glu Thr Ser Glu Glu Glu
            20   25   30
Asp Asp Asp Val Glu Asp Thr Asp Val Arg Cys Leu Val Arg Val Cys
        35   40   45
Glu Arg Pro Leu Lys Cys Ile Cys Lys Asp Gly Tyr Tyr Arg Asn Lys
    50   55   60
Lys Gly Glu Cys Val Thr Asp Asp Val Cys Gln Glu Asp Phe Met Glu
65   70   75   80
Phe Ile Thr Phe Ala Pro
                85

<210> 46
<211> 86
<212> PRT
<213> Ancyclostoma caninum

<220>
<221> misc_feature

70016337v1

<223>

<400> 46

```
Arg Pro Glu Lys Lys Cys Gly Pro Gly Glu Arg Leu Asp Cys Ala Asn
1               5                   10                  15
Lys Lys Pro Cys Glu Pro Lys Cys Lys Ile Glu Thr Ser Glu Glu Glu
            20                  25                  30
Asp Asp Asp Val Glu Glu Thr Asp Val Arg Cys Leu Val Arg Val Cys
        35                  40                  45
Glu Arg Pro Leu Lys Cys Ile Cys Lys Asp Gly Tyr Tyr Arg Asn Lys
    50                  55                  60
Lys Gly Glu Cys Val Thr Asp Asp Val Cys Gln Glu Asp Phe Met Glu
65                  70                  75                  80
Phe Ile Thr Phe Ala Pro
                85
```

<210> 47
<211> 78
<212> PRT
<213> Ancyclostoma caninum

<220>
<221> misc_feature
<223>

<400> 47

```
Lys Ser Leu Trp Asp Gln Lys Cys Gly Glu Asn Glu Arg Leu Asp Cys
1               5                   10                  15
Gly Asn Gln Lys Asp Cys Glu Arg Lys Cys Asp Asp Lys Arg Ser Glu
            20                  25                  30
Glu Glu Ile Met Gln Ala Cys Leu Thr Arg Gln Cys Leu Pro Pro Val
        35                  40                  45
Cys Val Cys Glu Asp Gly Phe Tyr Arg Asn Asp Asn Asp Gln Cys Val
    50                  55                  60
Asp Glu Glu Glu Cys Asn Met Glu Phe Ile Thr Phe Ala Pro
65                  70                  75
```

<210> 48
<211> 89
<212> PRT
<213> Ancyclostoma ceylanicum

<220>
<221> misc_feature
<223>

<400> 48

```
Lys Pro Asn Asn Val Met Thr Asn Ala Cys Gly Leu Asn Glu Tyr Phe
1               5                   10                  15
Ala Glu Cys Gly Asn Met Lys Glu Cys Glu His Arg Cys Asn Glu Glu
            20                  25                  30
Glu Asn Glu Glu Arg Asp Glu Glu Arg Ile Thr Ala Cys Leu Ile Arg
        35                  40                  45
```

Val Cys Phe Arg Pro Gly Ala Cys Val Cys Lys Asp Gly Phe Tyr Arg
    50   55   60
Asn Arg Thr Gly Ser Cys Val Glu Glu Asp Asp Cys Glu Tyr Glu Asn
65   70   75   80
Met Glu Phe Ile Thr Phe Ala Pro Glu
                    85

        <210> 49
        <211> 82
        <212> PRT
        <213> Ancyclostoma ceylanicum

        <220>
        <221> misc_feature
        <223>

        <400> 49

Val Pro Ile Cys Gly Ser Asn Glu Arg Tyr Ser Asp Cys Gly Asn Asp
 1   5   10   15
Lys Gln Cys Glu Arg Lys Cys Asn Glu Asp Asp Tyr Glu Lys Gly Asp
            20   25   30
Glu Ala Cys Arg Ser His Val Cys Glu Arg Pro Gly Ala Cys Val Cys
        35   40   45
Glu Asp Gly Phe Tyr Arg Asn Lys Lys Gly Ser Cys Val Glu Ser Asp
        50   55   60
Asp Cys Glu Tyr Asp Asn Met Asp Phe Ile Thr Phe Ala Pro Glu Thr
65   70   75   80
Ser Arg

        <210> 50
        <211> 84
        <212> PRT
        <213> Ancyclostoma caninum

        <220>
        <221> misc_feature
        <223>

        <400> 50

Lys Ser Ala Lys Lys Cys Gly Leu Asn Glu Lys Leu Asp Cys Gly Asn
 1   5   10   15
Leu Lys Ala Cys Glu Lys Lys Cys Ser Asp Leu Asp Asn Glu Glu Asp
            20   25   30
Tyr Lys Glu Glu Asp Glu Ser Lys Cys Arg Ser Arg Glu Cys Ser Arg
        35   40   45
Arg Val Cys Val Cys Asp Glu Gly Phe Tyr Arg Asn Lys Lys Gly Gln
        50   55   60
Cys Val Thr Arg Asp Asp Cys Glu Tyr Asp Asn Met Glu Ile Ile Thr
65   70   75   80
Phe Pro Pro Glu

        <210> 51
        <211> 84
        <212> PRT
        <213> Ancyclostoma caninum

<220>
<221> misc_feature
<223>

<400> 51

Lys Ser Ala Lys Lys Cys Gly Leu Asn Glu Lys Leu Asp Cys Gly Asn
1   5   10   15
Leu Lys Ala Cys Glu Lys Lys Cys Ser Asp Leu Asp Asn Glu Glu Asp
            20   25   30
Tyr Gly Glu Glu Asp Glu Ser Lys Cys Arg Ser Arg Glu Cys Ile Gly
        35   40   45
Arg Val Cys Val Cys Asp Glu Gly Phe Tyr Arg Asn Lys Lys Gly Gln
    50   55   60
Cys Val Thr Arg Asp Asp Cys Glu Tyr Asp Asn Met Glu Ile Ile Thr
65   70   75   80
Phe Pro Pro Glu

<210> 52
<211> 83
<212> PRT
<213> Ancyclostoma duodenale

<220>
<221> misc_feature
<223>

<400> 52

Lys Ala Ala Lys Lys Cys Gly Leu Asn Glu Arg Leu Asp Cys Gly Asn
1   5   10   15
Leu Lys Gln Cys Glu Pro Lys Cys Ser Asp Leu Glu Ser Glu Glu Tyr
            20   25   30
Glu Glu Glu Asp Glu Ser Lys Cys Arg Ser Arg Glu Cys Ser Arg Arg
        35   40   45
Val Cys Val Cys Asp Glu Gly Phe Tyr Arg Asn Lys Lys Gly Lys Cys
    50   55   60
Val Ala Lys Asp Val Cys Glu Asp Asp Asn Met Glu Ile Ile Thr Phe
65   70   75   80
Pro Pro Glu

<210> 53
<211> 78
<212> PRT
<213> Ancyclostoma caninum

<220>
<221> misc_feature
<223>

<400> 53

Asp Lys Cys Gly Pro Asp Glu Trp Phe Asp Trp Cys Gly Thr Tyr Lys
1   5   10   15
Gln Cys Glu Arg Lys Cys Asn Lys Glu Leu Ser Glu Lys Asp Glu Glu
            20   25   30

```
Ala Cys Leu Ser Arg Ala Cys Thr Gly Arg Ala Cys Val Cys Asn Asp
         35                  40                  45
Gly Leu Tyr Arg Asp Asp Phe Gly Asn Cys Val Glu Lys Asp Glu Cys
         50                  55                  60
Asn Asp Met Glu Ile Ile Thr Phe Pro Pro Glu Thr Lys His
65                       70                  75


        <210> 54
        <211> 78
        <212> PRT
        <213> Ancyclostoma caninum

        <220>
        <221> misc_feature
        <223>

        <400> 54

Asp Lys Cys Gly Pro Asp Glu Trp Phe Asp Trp Cys Gly Thr Tyr Lys
1                5                  10                  15
Gln Cys Glu Arg Lys Cys Ser Glu Glu Leu Ser Glu Lys Asn Glu Glu
         20                  25                  30
Ala Cys Leu Ser Arg Ala Cys Thr Gly Arg Ala Cys Val Cys Asn Asp
         35                  40                  45
Gly Leu Tyr Arg Asp Asp Phe Gly Asn Cys Val Glu Lys Asp Glu Cys
         50                  55                  60
Asn Asp Met Glu Ile Ile Thr Phe Pro Pro Glu Thr Lys His
65                       70                  75


        <210> 55
        <211> 77
        <212> PRT
        <213> Ancyclostoma duodenale

        <220>
        <221> misc_feature
        <223>

        <400> 55

Lys Cys Pro Thr Asp Glu Trp Phe Asp Trp Cys Gly Thr Tyr Lys His
1                5                  10                  15
Cys Glu Leu Lys Cys Asp Arg Glu Leu Thr Glu Lys Glu Glu Gln Ala
         20                  25                  30
Cys Leu Ser Arg Val Cys Glu Lys Ser Ala Cys Val Cys Asn Asp Gly
         35                  40                  45
Leu Tyr Arg Asp Lys Phe Gly Asn Cys Val Glu Lys Asp Glu Cys Asn
     50                  55                  60
Asp Met Glu Ile Ile Thr Phe Ala Pro Glu Glu Thr Lys
65                       70                  75


        <210> 56
        <211> 78
        <212> PRT
        <213> Ancyclostoma duodenale
```

<220>
<221> misc_feature
<223>

<400> 56

```
Asp Glu Cys Gly Pro Asp Glu Trp Phe Asp Tyr Cys Gly Asn Tyr Lys
1               5                   10                  15
Lys Cys Glu Arg Lys Cys Ser Glu Glu Thr Ser Glu Lys Asn Glu Glu
            20                  25                  30
Ala Cys Leu Ser Arg Ala Cys Thr Gly Arg Ala Cys Val Cys Lys Asp
        35                  40                  45
Gly Leu Tyr Arg Asp Asp Phe Gly Asn Cys Val Pro His Asp Glu Cys
    50                  55                  60
Asn Asp Met Glu Ile Ile Thr Phe Pro Pro Glu Thr Lys His
65                  70                  75
```

<210> 57
<211> 75
<212> PRT
<213> Ancyclostoma ceylanicum

<220>
<221> misc_feature
<223>

<400> 57

```
Lys Ala Phe Pro Lys Cys Asp Val Asn Glu Arg Phe Glu Val Cys Gly
1               5                   10                  15
Asn Leu Lys Glu Cys Glu Leu Lys Cys Asp Glu Asp Pro Lys Ile Cys
            20                  25                  30
Ser Arg Ala Cys Ile Arg Pro Pro Ala Cys Val Cys Asp Asp Gly Phe
        35                  40                  45
Tyr Arg Asp Lys Tyr Gly Phe Cys Val Glu Glu Asp Glu Cys Asn Asp
    50                  55                  60
Met Glu Ile Ile Thr Phe Pro Pro Glu Thr Lys
65                  70                  75
```

<210> 58
<211> 77
<212> PRT
<213> Ancyclostoma ceylanicum

<220>
<221> misc_feature
<223>

<400> 58

```
Arg Thr Val Lys Lys Cys Gly Lys Asn Glu Arg Tyr Asp Asp Cys Gly
1               5                   10                  15
Asn Ala Lys Asp Cys Glu Thr Lys Cys Gly Glu Glu Glu Lys Val Cys
            20                  25                  30
Arg Ser Arg Glu Cys Thr Ser Pro Gly Ala Cys Val Cys Glu Gln Gly
```

```
              35                    40                        45
Phe Tyr Arg Asp Pro Ala Gly Asp Cys Val Thr Asp Glu Glu Cys Asp
        50                    55                        60
Glu Trp Asn Asn Met Glu Ile Ile Thr Met Pro Lys Gln
65                            70                    75


        <210> 59
        <211> 84
        <212>  PRT
        <213>  Ancyclostoma caninum



        <220>
        <221>  misc_feature
        <223>


        <400>  59


Lys Ala Thr Met Gln Cys Gly Glu Asn Glu Lys Tyr Asp Ser Cys Gly
 1                    5                   10                  15
Ser Lys Glu Cys Asp Lys Lys Cys Lys Tyr Asp Gly Val Glu Glu Glu
            20                    25                  30
Asp Asp Glu Glu Pro Asn Val Pro Cys Leu Val Arg Val Cys His Glu
        35                    40                    45
Asp Cys Val Cys Glu Glu Gly Phe Tyr Arg Asn Lys Asp Asp Lys Cys
    50                    55                    60
Val Ser Ala Glu Asp Cys Glu Leu Asp Asn Met Asp Phe Ile Tyr Pro
65                        70                    75                80
Gly Thr Arg Asn


        <210> 60
        <211> 58
        <212>  PRT
        <213> Heligmosomoides polygyrus


        <220>
        <221>  misc_feature
        <223>


        <400>  60


Lys Thr Cys Gly Pro Asn Glu Glu Tyr Thr Glu Cys Gly Thr Pro Cys
 1                    5                   10                  15
Glu Pro Lys Cys Asn Glu Pro Met Pro Asp Ile Cys Thr Leu Asn Cys
            20                    25                  30
Ile Val Asn Val Cys Gln Cys Lys Pro Gly Phe Lys Arg Gly Pro Lys
        35                    40                    45
Gly Cys Val Ala Pro Gly Pro Gly Cys Lys
    50                55


        <210> 61
        <211> 61
        <212>  PRT
        <213>  Necator americanus



        <220>
```

<221> misc_feature
<223>

<400> 61

```
Lys Arg Asp Cys Pro Ala Asn Glu Glu Trp Arg Glu Cys Gly Thr Pro
1               5                   10                  15
Cys Glu Pro Lys Cys Asn Gln Pro Met Pro Asp Ile Cys Thr Met Asn
            20                  25                  30
Cys Ile Val Asp Val Cys Gln Cys Lys Glu Gly Tyr Lys Arg His Glu
        35                  40                  45
Thr Lys Gly Cys Leu Lys Glu Gly Ser Ala Asp Cys Lys
    50                  55                  60
```

<210> 62
<211> 171
<212> PRT
<213> Ancyclostoma ceylanicum

<220>
<221> misc_feature
<223>

<400> 62

```
Lys Pro Asn Asn Val Met Thr Asn Ala Cys Gly Leu Asn Glu Tyr Phe
1               5                   10                  15
Ala Glu Cys Gly Asn Met Lys Glu Cys Glu His Arg Cys Asn Glu Glu
            20                  25                  30
Glu Asn Glu Glu Arg Asp Glu Glu Arg Ile Thr Ala Cys Leu Ile Arg
        35                  40                  45
Val Cys Phe Arg Pro Gly Ala Cys Val Cys Lys Asp Gly Phe Tyr Arg
    50                  55                  60
Asn Arg Thr Gly Ser Cys Val Glu Glu Asp Asp Cys Glu Tyr Glu Asn
65                  70                  75                  80
Met Glu phe Ile Thr Phe Ala Pro Glu Val Pro Ile Cys Gly Ser Asn
                85                  90                  95
Glu Arg Tyr Ser Asp Cys Gly Asn Asp Lys Gln Cys Glu Arg Lys Cys
            100                 105                 110
Asn Glu Asp Asp Tyr Glu Lys Gly Asp Glu Ala Cys Arg Ser His Val
        115                 120                 125
Cys Glu Arg Pro Gly Ala Cys Val Cys Glu Asp Gly Phe Tyr Arg Asn
    130                 135                 140
Lys Lys Gly Ser Cys Val Glu Ser Asp Asp Cys Glu Tyr Asp Asn Met
145                 150                 155                 160
Asp Phe Ile Thr Phe Ala Pro Glu Thr Ser Arg
                165                 170
```

<210> 63
<211> 162
<212> PRT
<213> Ancyclostoma caninum

<220>
<221> misc_feature

<223>

<400> 63

```
Lys Ser Ala Lys Lys Cys Gly Leu Asn Glu Lys Leu Asp Cys Gly Asn
1               5                   10                  15
Leu Lys Ala Cys Glu Lys Lys Cys Ser Asp Leu Asp Asn Glu Glu Asp
            20                  25                  30
Tyr Lys Glu Glu Asp Glu Ser Lys Cys Arg Ser Arg Glu Cys Ser Arg
        35                  40                  45
Arg Val Cys Val Cys Asp Glu Gly Phe Tyr Arg Asn Lys Lys Gly Gln
    50                  55                  60
Cys Val Thr Arg Asp Asp Cys Glu Tyr Asp Asn Met Glu Ile Ile Thr
65                  70                  75                  80
Phe Pro Pro Glu Asp Lys Cys Gly Pro Asp Glu Trp Phe Asp Trp Cys
                85                  90                  95
Gly Thr Tyr Lys Glu Cys Glu Arg Lys Cys Asn Lys Glu Leu Ser Glu
            100                 105                 110
Lys Asp Glu Glu Ala Cys Leu Ser Arg Ala Cys Thr Gly Arg Ala Cys
            115                 120                 125
Val Cys Asn Asp Gly Leu Tyr Arg Asp Asp Phe Gly Asn Cys Val Glu
        130                 135                 140
Lys Asp Glu Cys Asn Asp Met Glu Ile Ile Thr Phe Pro Pro Glu Thr
145                 150                 155                 160
Lys His
```

<210> 64
<211> 162
<212>   PRT
<213>   Ancyclostoma caninum

<220>
<221>   misc_feature
<223>

<400>   64

```
Lys Ser Ala Lys Lys Cys Gly Leu Asn Glu Lys Leu Asp Cys Gly Asn
1               5                   10                  15
Leu Lys Ala Cys Glu Lys Lys Cys Ser Asp Leu Asp Asn Glu Glu Asp
            20                  25                  30
Tyr Gly Glu Glu Asp Glu Ser Lys Cys Arg Ser Arg Glu Cys Ile Gly
        35                  40                  45
Arg Val Cys Val Cys Asp Glu Gly Phe Tyr Arg Asn Lys Lys Gly Glu
    50                  55                  60
Cys Val Thr Arg Asp Asp Cys Glu Tyr Asp Asn Met Glu Ile Ile Thr
65                  70                  75                  80
Phe Pro Pro Glu Asp Lys Cys Gly Pro Asp Glu Trp Phe Asp Trp Cys
                85                  90                  95
Gly Thr Tyr Lys Gln Cys Glu Arg Lys Cys Ser Glu Glu Leu Ser Glu
            100                 105                 110
Lys Asn Glu Glu Ala Cys Leu Ser Arg Ala Cys Thr Gly Arg Ala Cys
            115                 120                 125
Val Cys Asn Asp Gly Leu Tyr Arg Asp Asp Phe Gly Asn Cys Val Glu
        130                 135                 140
Lys Asp Glu Cys Asn Asp Met Glu Ile Ile Thr Phe Pro Pro Glu Thr
```

Lys His

<210> 65
<211> 161
<212> PRT
<213> Ancyclostoma duodenale

<220>
<221> misc_feature
<223>

<400> 65

Lys Ala Ala Lys Lys Cys Gly Leu Asn Glu Arg Leu Asp Cys Gly Asn
1   5   10   15
Leu Lys Gln Cys Glu Pro Lys Cys Ser Asp Leu Glu Ser Glu Glu Tyr
            20   25   30
Glu Glu Glu Asp Glu Ser Lys Cys Arg Ser Arg Glu Cys Ser Arg Arg
        35   40   45
Val Cys Val Cys Asp Glu Gly Phe Tyr Arg Asn Lys Lys Gly Lys Cys
    50   55   60
Val Ala Lys Asp Val Cys Glu Asp Asp Asn Met Glu Ile Ile Thr Phe
65   70   75   80
Pro Pro Glu Asp Glu Cys Gly Pro Asp Glu Trp Phe Asp Tyr Cys Gly
                85   90   95
Asn Tyr Lys Lys Cys Glu Arg Lys Cys Ser Glu Glu Thr Ser Glu Lys
        100   105   110
Asn Glu Glu Ala Cys Leu Ser Arg Ala Cys Thr Gly Arg Ala Cys Val
        115   120   125
Cys Lys Asp Gly Leu Tyr Arg Asp Asp Phe Gly Asn Cys Val Pro His
    130   135   140
Asp Glu Cys Asn Asp Met Glu Ile Ile Thr Phe Pro Pro Glu Thr Lys
145   150   155   160
His

<210> 66
<211> 9
<212> PRT
<213>

<220>
<221> CDS
<222> (2)..(9)

<220>
<221> "Xaa" is an amino 2 to 9 acid
<223>

<400> 66

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5

```
<210>  67
<211>  9
<212>  PRT
<213>


<220>
<221>  CDS
<222>  (2)..(9)


<220>
<221>  "Xaa" is an amino 2 to 9 acid
<223>


<400>  67

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1                   5


<210>  68
<211>  7
<212>  PRT
<213>


<220>
<221>  CDS
<222>  (1)..(2)


<220>
<221>  "Xaa" at locations 1 and 2 is an amino acid, provided that at
least one of Xaa at location 1 and 2 is Glu or Asp, Xaa in locations 3
to 8 is an amino acid
<223>


<400>  68

Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1                 5


<210>  69
<211>  5
<212>  PRT
<213>



<220>
<221>  misc_feature
<223>


<400>  69

Gly Phe Tyr Arg Asp
 1


<210>  70
<211>  5
<212>  PRT
<213>
```

<220>
<221> misc_feature
<223>

<400> 70

Gly Phe Tyr Arg Asn
1   5

<210> 71
<211> 5
<212> PRT
<213>

<220>
<221> misc_feature
<223>

<400> 71

Gly Tyr Tyr Arg Asp
1   5

<210> 72
<211> 5
<212> PRT
<213>

<220>
<221> misc_feature
<223>

<400> 72

Gly Try Tyr Arg Asn
1   5

<210> 73
<211> 5
<212> PRT
<213>

<220>
<221> misc_feature
<223>

<400> 73

Gly Leu Tyr Arg Asp
1   5

<210> 74
<211> 5
<212> PRT
<213>

<220>
<221> misc_feature
<223>

<400> 74

Glu Ile Ile His Val
 1   5

<210> 75
<211> 5
<212> PRT
<213>

<220>
<221> misc_feature
<223>

<400> 75

Asp Ile Ile Met Val
 1   5

<210> 76
<211> 6
<212> PRT
<213>

<220>
<221> misc_feature
<223>

<400> 76

Phe Ile Thr Phe Ala Pro
 1   5

<210> 77
<211> 5
<212> PRT
<213>

<220>
<221> misc_feature
<223>

<400> 77

Met Glu Ile Ile Thr
  1   5

        <210> 78
        <211> 5
        <212> PRT
        <213>

        <220>
        <221> "Xaa" in locations 1 and 2 is an amino acid, provided that at
        least one Xaa is Glu or Asp
        <223>

        <400> 78

Xaa Xaa Gly Phe Tyr Arg Asp
  1   5

        <210> 79
        <211> 7
        <212> PRT
        <213>

        <220>
        <221> "Xaa" in locations 1 and 2 is an amino acid, provided that at
        least one Xaa is Glu or Asp
        <223>

        <400> 79

Xaa Xaa Gly Phe Tyr Arg Asn
  1   5

        <210> 80
        <211> 7
        <212> PRT
        <213>

        <220>
        <221> "Xaa" in locations 1 and 2 is an amino acid, provided that at
        least one Xaa is Glu or Asp
        <223>

        <400> 80

Xaa Xaa Gly Tyr Tyr Arg Asp
  1   5

        <210> 81
        <211> 7
        <212> PRT
        <213>

<220>
<221> "Xaa" in locations 1 and 2 is an amino acid, provided that at least one Xaa is Glu or Asp
<223>

<400> 81

Xaa Xaa Gly Tyr Tyr Arg Asn
 1   5

<210> 82
<211> 7
<212> PRT
<213>

<220>
<221> "Xaa" in locations 1 and 2 is an amino acid, provided that at least one Xaa is Glu or Asp
<223>

<400> 82

Xaa Xaa Gly Leu Tyr Arg Asp
 1   5

<210> 83
<211> 9
<212> PRT
<213>

<220>
<221> "Xaa" in locations 2 to 9 is an amino acid
<223>

<400> 83

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5

<210> 84
<211> 4
<212> PRT
<213>

<220>
<221> "Xaa" in locations 1 is an amino acid, perferably Leu; Xaa in location 2 is an amino acid; Xaa in location 3 is an amino acid, perferably Arg; Xaa in location 4 is an amino acid
<223>

<400> 84

Xaa Xaa Xaa Xaa

1

<210> 85
<211> 4
<212> PRT
<213>

<220>
<221> "Xaa" in locations 1 to 4 is an amino acid
<223>

<400> 85

Xaa Xaa Xaa Xaa
  1

<210> 86
<211> 9
<212> PRT
<213>

<220>
<221> "Xaa" in locations 1 to 2 is an amino acid
<223>

<400> 86

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
  1   5

<210> 87
<211> 9
<212> PRT
<213>

<220>
<221> "Xaa" in locations 1 to 2 is an amino acid
<223>

<400> 87

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
  1   5

<210> 88
<211> 25
<212> DNA
<213>

<400> 88

TCAGACATGT ATAATCTCAT GTTGG   25

```
<210>  89
<211>  25
<212>  DNA
<213>

<400>  89
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AACCCATACC CCCACTCTOC TC   22

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<210> 90
<211> 21
<212>  PRT
<213>


<220>
<221>  "Xaa" in locations 1 to 2 is an amino acid
<223>

<400>  90
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AARCCNTGYG ARMGGAARTG Y 21

```
<210> 91
<211> 23
<212>  PRT
<213>  Ancyclostoma caninum

<220>
<221>  "W" stands for A or T; "R" stands for A of G; "N" stands for any
base; and "Y" stands for C or T.
<223>

<400>  91
```

TWRWANCCNT CYTTRCANAC RCA   23

```
<210> 92
<211> 13
<212>  PRT
<213>  Ancyclostoma caninum

<220>
<221>  misc_feature
<223>

<400>  92
```

Lys Ala Tyr Pro Glu Cys Gly Glu Asn Glu Trp Leu Aop
 1   5   10

```
<210> 93
<211> 11
<212>  PRT
<213>  Ancyclostoma caninum
```

<220>
<221> misc_feature
<223>

<400> 93

Lys Ala Tyr Pro Glu Cys Gly Glu Asn Glu Trp
1   5   10

<210> 94
<211> 28
<212> DNA
<213> Ancyclostoma caninum

<220>
<221> "R" stands for A or G; "N" stands for inosine; "Y" stands for C or T
<223>

<400> 94

AARGCNTAYC CNGARTGYGG NGARAAYGAR TGG   33

<210> 95
<211> 28
<212> DNA
<213> Ancyclostoma caninum

<220>
<221> misc_feature
<223>

<400> 95

AATTCGCGGC CGCTTTTTTT TTTTTTTT   28

<210> 96
<211> 24
<212> DNA
<213>

<220>
<221> misc_feature
<223>

<400> 96

CCTGGCGACG ACTCCTGGAG CCCC   24

<210> 97
<211> 20
<212> PRT
<213> Ancyclostoma caninum

<220>

```
<221>  misc_feature
<223>  N-terminal caninum

<400>  97
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Lys Ala Tyr Pro Glu Cys Gly Glu Asn Glu Tip Leu Asp Asp Cys Gly Thr
1   5   10   15
Gb Lys Pro
    20

```
<210> 98
<211> 10
<212>  DNA
<213>  Ancyclostoma caninum

<220>
<221>  misc_feature
<223>

<400>  98
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CGGAATTCCG   10

```
<210> 99
<211> 18
<212>  DNA
<213>  Ancyclostoma caninum

<220>
<221>  misc_feature
<223>

<400>  99
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TGGCCTAGCG TCAGGAGT   18

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<210> 100
<211> 18
<212>  DNA
<213>  Ancyclostoma caninum

<220>
<221>  misc_feature
<223>

<400>  100
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CCTGACGCTA GGCCATGG   18

```
<210> 101
<211> 24
<212>  DNA
<213>  Ancyclostoma caninum

<220>
<221>  misc_feature
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<223>

<400> 101

AGCGGATAAC AATTTCACAC AGGA   24

<210> 102
<211> 66
<212> DNA
<213> Ancyclostoma caninum

<220>
<221> misc_feature
<223>

<400> 102

ATGTTCTCTC CAATTTTGTC CTTGGAAATT ATTTTAGCTT TGGCTACTTT GCAATCTGTC   60

TTCGCT   66

<210> 103
<211> 57
<212> DNA
<213> Ancyclostoma caninum

<220>
<221> misc_feature
<223>

<400> 103

CAGCCAGGTA TCTCCACTAC CGTTGGTTCC GCTGCCGAGG GTTCTTTGGA CAAGAGG   57

<210> 104
<211> 51
<212> DNA
<213> Ancyclostoma caninum

<220>
<221> misc_feature
<223>

<400> 104

CCTATCCGCG GAATTCAGAT CTGAATGCGG CCGCTCGAGA CTAGTGGATC C   51

<210> 105
<211> 41
<212> DNA
<213> Ancyclostoma caninum

<220>
<221> misc_feature
<223>

<400> 105

GCTCGCTCTA GAAGCTTCAG ACATGTATAA TCTCATGTTG C   41

        <210> 106
        <211> 36
        <212> PRT
        <213> Ancyclostoma caninum

        <220>
        <221> misc_feature
        <223> N-terminal fragment

        <400> 106

Lys Ala Tyr Pro Glu
 1   5

        <210> 107
        <211> 36
        <212> DNA
        <213> Ancyclostoma caninum

        <220>
        <221> misc_feature
        <223>

        <400> 107

GACCACTCTA GACAATGAAG ATGCTTTACG CTATCC   36

        <210> 108
        <211> 23
        <212> DNA
        <213> Ancyclostoma caninum

        <220>
        <221> misc_feature
        <223>

        <400> 108

CTGGGAGACC TGATACTCTC AAG   23

        <210> 109
        <211> 9
        <212> PRT
        <213> Ancyclostoma caninum

        <220>
        <221> misc_feature
        <223> N-terminal fragment

        <400> 109

Arg Thr Val Arg Lys Ala Tyr Pro Glu

70016337v1

       <210> 110
       <211> 5
       <212> PRT
       <213> Ancyclostoma caninum

       <220>
       <221> misc_feature
       <223> N-terminal fragment

       <400> 110

Arg Thr Val Arg Lys
   1   5

       <210> 111
       <211> 33
       <212> DNA
       <213> Ancyclostoma caninum

       <220>
       <221> misc_feature
       <223>

       <400> 111

ATCCGAAGCT TTGCTAACAT ACTGCGTAAT AAG   33

       <210> 112
       <211> 60
       <212> DNA
       <213>

       <220>
       <221> misc_feature
       <223>

       <400> 112
TATGGGATGG CCGACTTGGC CTCCGCCTGA GCCTCCACCT TTATCCCAAT CCAAATAAGA   60

       <210> 113
       <211> 60
       <212> DNA
       <213>

       <220>
       <221> misc_feature
       <223>

       <400> 113

ATGGGATGGC CGACTTGGCC CTCCGCCTGA GCCTCCACCT TTATCCCAAT CCAAATAAGA   60

       <210> 114
       <211> 60

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<212>  DNA
<213>

<220>
<221>  misc_feature
<223>

<400>  114

TATGGCATGC CCGACTTGGC CCATCCGCCT GAGCCTCCAC CTTTATCCCA ATCCAAATAA          60


<210> 115
<211> 45
<212>  DNA
<213>

<220>
<221>  misc_feature
<223>

<400>  115

AGGAGGGGAT CCGCGGCCGC GTGATATGGG ATGGCCCACT TGGCC          45


<210> 116
<211> 24
<212>  DNA
<213>

<220>
<221>  misc_feature
<223>

<400>  116

CGCCAGGGTT TTCCCAGTCA CGAC          24


<210> 117
<211> 28
<212>  DNA
<213>

<220>
<221>  misc_feature
<223>

<400>  117

GTTTCGAGTT CCGGGATATA TAAAGTCC          28


<210> 118
<211> 7
<212>  PRT
<213>

<220>
```

<221> "Xaa" in location 5 is Arg, Pro or Lys
<223>

<400> 118

Lys Pro Cys Glu Xaa Lys Cys
 1   5

<210> 119
<211> 8
<212> PRT
<213>

<220>
<221> "Xaa" in location 2 is Val, Ile or Gln; Xaa in location 4 is
Lys, Asp, Glu or Gln; Xaa in location 5 is Asp or Glu; Xaa in location
7 is Phe or Tyr
<223>

<400> 119

Cys Xaa Cys Xaa Xaa Gly Xaa Tyr
 1   5

<210> 120
<211> 44
<212> DNA
<213>

<220>
<221> misc_feature
<223>

<400> 120

GACCAGTCTA GACCACCATG GCGGTGCTTT ATTCAGTAGC AATA   44

<210> 121
<211> 40
<212> DNA
<213>

<220>
<221> misc_feature
<223>

<400> 121

GCTCGCTCTA GATTATCGTG AGGTTTCTGG TGCAAAAGTG   40

<210> 122
<211> 24
<212> DNA
<213>

<220>

<221> misc_feature
<223>

<400> 122

AAAGCAACGA TGCAGTGTGG TGAG   24

<210> 123
<211> 47
<212> DNA
<213>

<220>
<221> misc_feature
<223>

<400> 123

GCTCGCTCTA GAAGCTTCAG TTTCGAGTTC CGGGATATAT AAAGTCC   47

<210> 124
<211> 30
<212> DNA
<213>

<220>
<221> misc_feature
<223>

<400> 124

GAGACTTTTA AATCACTCTC CCATCAGAAG   30

<210> 125
<211> 33
<212> DNA
<213>

<220>
<221> misc_feature
<223>

<400> 125

TTCAGGACTA GTTCATOGTG CGRAAGTAAT AAA   33

<210> 126
<211> 28
<212> DNA
<213>

<220>
<221> misc_feature
<223>

<400> 126

```
<210> 127
<211> 46
<212>  DNA
<213>


<220>
<221>  misc_feature
<223>


<400>  127
```

CGCTCTAGAA GCTTCATGGG TTTCGAGTTC COGGATATAT AAAGTC 46

```
<210> 128
<211> 91
<212>  PRT
<213>  Ancyclostoma caninum


<220>
<221>  misc_feature
<223>


<400>  128
```

```
Leu Val Ear Tyr Cys Ser Gly Lys Ala Thr Met Gln Cys Gly Glu Asn
 1               5                  10                  15

Glu Lys Tyr Asp Ser Cys Gly Ser Lys Glu Cys Asp Lys Lys Cys Lys
              20                  25                  30

Tyr Asp Gly Val Glu Glu Glu Asp Asp Glu Glu Pro Asn Val Pro Cys
              35                  40                  45

Leu Val Arg Val Cys His Gln Asp Cys Val Cys Glu Glu Gly Phe Tyr
    50                  55                  60

Arg Asn Lys Asp Asp Lys Cys Val Ser Ala Glu Asp Cys Glu Leu Asp
65                  70                  75                  80

Asn Met Asp Phe Ile Tyr Pro Gly Thr Arg Asn
              85                  90
```

```
<210> 129
<211> 8
<212>  PRT
<213>


<220>
<221>  Xaa in locations 2 to 8 is an amino acid
<223>  Internal fragment


<400>  129
```

```
Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1               5


     <210> 130
     <211> 7
     <212>  PRT
     <213>


     <220>
     <221>  misc_feature
     <223>


     <400>  130

Cys Xaa Xaa Xaa Xaa Xaa Cys
1               5


     <210> 131
     <211> 6
     <212>  DNA
     <213>


     <220>
     <221>  Xaa in location 2 to 5 is an amino acid
     <223>  Internal fragment


     <400>  131

Cys Xaa Xaa Xaa Xaa Cys
 1               5


     <210> 132
     <211> 5
     <212>  PRT
     <213>


     <220>
     <221>  Xaa in locations 2 to 4 is an amino acid
     <223>  Internal fragment


     <400>  132

Cys Xaa Xaa Xaa Cys
1               5


     <210> 133
     <211> 4
     <212>  PRT
     <213>


     <220>
     <221>  Xaa in locations 2 and 3 is an amino acid
     <223>   Internal fragment


     <400>  133
```

```
Cys Xaa Xaa Cys
1


      <210> 134
      <211> 21
      <212>  PRT
      <213>


      <220>
      <221>  Internal fragment
      <223>  Xaa in locations 1 to 3 and 5 to 21 is an amino acid


      <400>  134

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1               5                   10                  15

Xaa Xaa Xaa Xaa Xaa
            20


      <210> 135
      <211> 20
      <212>  PRT
      <213>


      <220>
      <221> Xaa in locations 1 to 3 and 5 to 20 is an amino acid
      <223>  Internal fragment


      <400>  135

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1               5                   10                  15

Xaa Xaa Xaa Xaa
            20


      <210> 136
      <211> 19
      <212>  PRT
      <213>


      <220>
      <221> Xaa in locations 1 to 3 and 5 to 19 is an amino acid
      <223>  Internal fragment


      <400>  136

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1               5                   10                  15

Xaa Xaa Xaa


      <210> 137
      <211> 18
      <212>  PRT
```

<210> 137
<211> 18
<212> PRT
<213>

<220>
<221> Xaa in locations 1 to 3 and 5 to 18 is an amino acid
<223> Internal fragment

<400> 137

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10   15

Xaa Xaa

<210> 138
<211> 17
<212> PRT
<213>

<220>
<221> Xaa in locations 1 to 3 and 5 to 17 is an amino acid
<223> Internal fragment

<400> 138

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10   15

Xaa

<210> 139
<211> 16
<212> PRT
<213>

<220>
<221> Xaa in locations 1 to 3 and 5 to 16 is an amino acid
<223> Internal fragment

<400> 139

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10   15

<210> 140
<211> 15
<212> PRT
<213>

<220>
<221> Xaa in locations 1 to 3 and 5 to 15 is an amino acid
<223> Internal fragment

<400> 140

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10   15

```
<210> 141
<211> 14
<212>  PRT
<213>

<220>
<221> Xaa in locations 1 to 3 and 5 to 14 is an amino acid
<223>  Internal fragment

<400>  141
```

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10

```
<210> 142
<211> 13
<212>  PRT
<213>

<220>
<221> Xaa in locations 1 to 3 and 5 to 13 is an amino acid
<223>  Internal fragment

<400>  142
```

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10

```
<210> 143
<211> 12
<212>  PRT
<213>

<220>
<221> Xaa in locations 1 to 3 and 5 to 12 is an amino acid
<223>  Internal fragment

<400>  143
```

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10

```
<210> 144
<211> 11
<212>  PRT
<213>

<220>
<221> Xaa in locations 1 to 3 and 5 to 11 is an amino acid
<223>  Internal fragment

<400>  144
```

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10

```
<210> 145
<211> 10
<212>  PRT
<213>


<220>
<221> Xaa in locations 1 to 3 and 5 to 10 is an amino acid
<223>  Internal fragment


<400>  145


Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa
 1               5                   10


<210> 146
<211> 5
<212>  PRT
<213>


<220>
<221> Xaa in locations 2 to 5 is an amino acid
<223>  Internal fragment


<400>  146


Cys Xaa Xaa Xaa Xaa
 1               5


<210> 147
<211> 4
<212>  PRT
<213>


<220>
<221> Xaa in locations 2 to 4 is an amino acid
<223>  Internal fragment


<400>  147


Cys Xaa Xaa Xaa
 1


<210> 148
<211> 6
<212>  PRT
<213>


<220>
<221> Xaa in locations 2 to 6 is an amino acid
<223>  Internal fragment


<400>  148


Cys Xaa Xaa Xaa Xaa Xaa
 1               5
```

```
<210> 149
<211> 5
<212>  PRT
<213>

<220>
<221> Xaa in locations 2 to 5 is an amino acid
<223>  Internal fragment

<400>  149

Cys Xaa Xaa Xaa Xaa
 1               5


<210> 150
<211> 4
<212>  PRT
<213>

<220>
<221> Xaa in locations 2 to 4 is an amino acid
<223>  Internal fragment

<400>  150

Cys Xaa Xaa Xaa
 1


<210> 151
<211> 15
<212>  PRT
<213>

<220>
<221> Xaa in locations 2 and 4 is an amino acid
<223>  Internal fragment

<400>  151

Cys Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1               5                   10                  15


<210> 152
<211> 14
<212>  PRT
<213>

<220>
<221> Xaa in locations 2 and locations 4 to 14 is an amino acid
<223>  Internal fragment

<400>  152

Cys Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1               5                   10
```

```
        <210> 153
        <211> 13
        <212>  PRT
        <213>


        <220>
        <221> Xaa in locations 2 and locations 4 to 13 is an amino acid
        <223>  Internal fragment


        <400>  153

Cys Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1               5                   10


        <210> 154
        <211> 8
        <212>  PRT
        <213>


        <220>
        <221>  Xaa in locations 2 and 7 is an amino acid
        <223>  Internal fragment


        <400>  154

Cys Xaa Xaa Xaa Xaa Xaa Xaa Cys
 1               5


        <210> 155
        <211> 7
        <212>  PRT
        <213>


        <220>
        <221> Xaa in locations 2 to 6 is an amino acid
        <223>  Internal fragment


        <400>  155

Cys Xaa Xaa Xaa Xaa Xaa Cys
 1               5


        <210> 156
        <211> 8
        <212>  PRT
        <213>


        <220>
        <221> Xaa in locations 2 to 8 is an amino acid
        <223>  Internal fragment


        <400>  156

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1               5
```

```
<210> 157
<211> 7
<212>  PRT
<213>


<220>
<221> Xaa in locations 2 to 6 is an amino acid
<223>  Internal fragment


<400>  157
```

Cys Xaa Xaa Xaa Xaa Xaa Cys
 1   5

```
<210> 158
<211> 6
<212>  PRT
<213>


<220>
<221> Xaa in locations 2 to 5 is an amino acid
<223>  Internal fragment


<400>  158
```

Cys Xaa Xaa Xaa Xaa Cys
 1   5

```
<210> 159
<211> 5
<212>  PRT
<213>


<220>
<221> Xaa in locations 2 to 4 is an amino acid
<223>  Internal fragment


<400>  159
```

Cys Xaa Xaa Xaa Cys
 1   5

```
<210> 160
<211> 23
<212>  PRT
<213>


<220>
<221>  Xaa in locations 1 to 3 and locations 5 to 23 is an amino acid
<223>  Internal fragment


<400>  160
```

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10   15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa
            20

        <210> 161
        <211> 22
        <212> PRT
        <213>

        <220>
        <221> Xaa in locations 1 to 3 and locations 5 to 22 is an amino acid
        <223> Internal fragment

        <400> 161

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10   15

Xaa Xaa Xaa Xaa Xaa Xaa
            20

        <210> 162
        <211> 21
        <212> PRT
        <213>

        <220>
        <221> Xaa in locations 1 to 3 and locations 5 to 21 is an amino acid
        <223> Internal fragment

        <400> 162

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10   15

Xaa Xaa Xaa Xaa Xaa
            20

        <210> 163
        <211> 20
        <212> PRT
        <213>

        <220>
        <221> Xaa in locations 1 to 3 and locations 5 to 20 is an amino acid
        <223> Internal fragment

        <400> 163

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10   15

Xaa Xaa Xaa Xaa
            20

        <210> 164
        <211> 19

```
        <212>  PRT
        <213>


        <220>
        <221> Xaa in locations 1 to 3 and locations 5 to 19 is an amino acid
        <223>  Internal fragment


        <400>  164


Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1               5                   10                  15


Xaa Xaa Xaa


        <210> 165
        <211> 18
        <212>  PRT
        <213>


        <220>
        <221> Xaa in locations 1 to 3 and locations 5 to 18 is an amino acid
        <223>  Internal fragment


        <400>  165


Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1               5                   10                  15


Xaa Xaa


        <210> 166
        <211> 17
        <212>  PRT
        <213>


        <220>
        <221> Xaa in locations 1 to 3 and locations 5 to 17 is an amino acid
        <223>  Internal fragment


        <400>  166


Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1               5                   10                  15


Xaa


        <210> 167
        <211> 16
        <212>  PRT
        <213>


        <220>
        <221> Xaa in locations 1 to 3 and locations 5 to 16 is an amino acid
        <223>  Internal fragment


        <400>  167
```

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10   15

        <210> 168
        <211> 15
        <212> PRT
        <213>

        <220>
        <221> Xaa in locations 1 to 3 and locations 5 to 15 is an amino acid
        <223> Internal fragment

        <400> 168

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10   15

        <210> 169
        <211> 14
        <212> PRT
        <213>

        <220>
        <221> Xaa in locations 1 to 3 and locations 5 to 14 is an amino acid
        <223> Internal fragment

        <400> 169

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10

        <210> 170
        <211> 13
        <212> PRT
        <213>

        <220>
        <221> Xaa in locations 1 to 3 and locations 5 to 13 is an amino acid
        <223> Internal fragment

        <400> 170

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10

        <210> 171
        <211> 12
        <212> PRT
        <213>

        <220>
        <221> Xaa in locations 1 to 3 and locations 5 to 12 is an amino acid
        <223> Internal fragment

        <400> 171

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10

        <210> 172
        <211> 11
        <212> PRT
        <213>

        <220>
        <221> Xaa in locations 1 to 3 and locations 5 to 11 is an amino acid
        <223> Internal fragment

        <400> 172

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10

        <210> 173
        <211> 10
        <212> PRT
        <213>

        <220>
        <221> Xaa in locations 1 to 3 and locations 5 to 10 is an amino acid
        <223> Internal fragment

        <400> 173

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10

        <210> 174
        <211> 20
        <212> PRT
        <213>

        <220>
        <221> Xaa in locations 2 to 5 is an amino acid
        <223> Internal fragment

        <400> 174

Cys Xaa Xaa Xaa Xaa
1   5

        <210> 175
        <211> 20
        <212> PRT
        <213>

        <220>
        <221> Xaa in locations 2 to 4 is an amino acid
        <223> Internal fragment

        <400> 175

Cys Xaa Xaa Xaa
 1

        <210> 176
        <211> 6
        <212> PRT
        <213>

        <220>
        <221> Xaa in locations 2 to 6 is an amino acid
        <223> Internal fragment

        <400> 176

Cys Xaa Xaa Xaa Xaa Xaa
 1   5

        <210> 177
        <211> 5
        <212> PRT
        <213>

        <220>
        <221> Xaa in locations 2 to 5 is an amino acid
        <223> Internal fragment

        <400> 177

Cys Xaa Xaa Xaa Xaa
 1   5

        <210> 178
        <211> 4
        <212> PRT
        <213>

        <220>
        <221> Xaa in locations 2 to 4 is an amino acid
        <223> Internal fragment

        <400> 178

Cys Xaa Xaa Xaa
 1

        <210> 180
        <211> 14
        <212> PRT
        <213>

        <220>
        <221> Xaa in locations 2 and locations 4 to 14 is an amino acid
        <223> Internal fragment

        <400> 180

```
Cys Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1               5                   10                  15

        <210> 181
        <211> 8
        <212>  PRT
        <213>

        <220>
        <221> Xaa in locations 2 to 8 is an amino acid
        <223>  Internal fragment

        <400>  181

Cys Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1               5                   10

        <210> 182
        <211> 7
        <212>  PRT
        <213>

        <220>
        <221> Xaa in locations 2 to 7 is an amino acid
        <223>  Internal fragment

        <400>  182

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1               5

        <210> 183
        <211> 6
        <212>  PRT
        <213>

        <220>
        <221> Xaa in locations 2 to 6 is an amino acid
        <223>  Internal fragment

        <400>  183

Cys Xaa Xaa Xaa Xaa Xaa Xaa
 1               5

        <210> 184
        <211> 26
        <212>  PRT
        <213>

        <220>
        <221> Xaa in locations 2 to 26 is an amino acid
        <223>  Internal fragment

        <400>  184
```

Cys Xaa Xaa Xaa Xaa Xaa
 1   5

        <210> 185
        <211> 25
        <212> PRT
        <213>

        <220>
        <221> Xaa in locations 2 to 25 is an amino acid
        <223> Internal fragment

        <400> 185

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10   15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
             20   25

        <210> 186
        <211> 24
        <212> PRT
        <213>

        <220>
        <221> Xaa in locations 2 to 24 is an amino acid
        <223> Internal fragment

        <400> 186

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10   15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
             20   25

        <210> 187
        <211> 23
        <212> PRT
        <213>

        <220>
        <221> Xaa in locations 2 to 23 is an amino acid
        <223> Internal fragment

        <400> 187

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10   15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
             20

        <210> 188

```
<211> 22
<212> PRT
<213>

<220>
<221> Xaa in locations 2 to 22 is an amino acid
<223> Internal fragment

<400> 188

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1               5                   10                  15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa
            20

<210> 189
<211> 21
<212> PRT
<213>

<220>
<221> Xaa in locations 2 to 21 is an amino acid
<223> Internal fragment

<400> 189

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1               5                   10                  15

Xaa Xaa Xaa Xaa Xaa Xaa
            20

<210> 190
<211> 20
<212> PRT
<213>

<220>
<221> Xaa in locations 2 to 20 is an amino acid
<223> Internal fragment

<400> 190

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1               5                   10                  15

Xaa Xaa Xaa Xaa Xaa
            20

<210> 191
<211> 19
<212> PRT
<213>

<220>
```

<221> Xaa in locations 2 to 19 is an amino acid
<223> Internal fragment

<400> 191

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10   15

Xaa Xaa Xaa Xaa
            20

<210> 192
<211> 18
<212> PRT
<213>

<220>
<221> Xaa in locations 2 to 18 is an amino acid
<223> Internal fragment

<400> 192

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10   15

Xaa Xaa Xaa

<210> 193
<211> 17
<212> PRT
<213>

<220>
<221> Xaa in locations 2 to 17 is an amino acid
<223> Internal fragment

<400> 193

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10   15

Xaa Xaa

<210> 194
<211> 16
<212> PRT
<213>

<220>
<221> Xaa in locations 2 to 16 is an amino acid
<223> Internal fragment

<400> 194

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10   15

Xaa

<210> 195
<211> 15
<212> PRT
<213>

<220>
<221> Xaa in locations 2 to 15 is an amino acid
<223> Internal fragment

<400> 195

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10   15

<210> 196
<211> 14
<212> PRT
<213>

<220>
<221> Xaa in locations 2 to 14 is an amino acid
<223> Internal fragment

<400> 196

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10   15

<210> 197
<211> 13
<212> PRT
<213>

<220>
<221> Xaa in locations 2 to 13 is an amino acid
<223> Internal fragment

<400> 197

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10

<210> 198
<211> 20
<212> PRT
<213>

<220>
<221> Xaa in locations 2 to 12 is an amino acid
<223> Internal fragment

<400> 198

```
Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1               5                   10

        <210> 199
        <211> 11
        <212>  PRT
        <213>


        <220>
        <221> Xaa in locations 2 to 11 is an amino acid
        <223>  Internal fragment

        <400>  199

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1               5                   10

        <210> 200
        <211> 10
        <212>  PRT
        <213>


        <220>
        <221> Xaa in locations 2 to 10 is an amino acid
        <223>  Internal fragment

        <400>  200

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1               5                   10

        <210> 201
        <211> 9
        <212>  PRT
        <213>


        <220>
        <221> Xaa in locations 2 to 9 is an amino acid
        <223>  Internal fragment

        <400>  201

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1               5                   10

        <210> 202
        <211> 8
        <212>  PRT
        <213>


        <220>
        <221> Xaa in locations 2 to 8 is an amino acid
        <223>  Internal fragment

        <400>  202
```

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5

        <210> 203
        <211> 7
        <212> PRT
        <213>

        <220>
        <221> Xaa in locations 2 to 7 is an amino acid
        <223> Internal fragment

        <400> 203

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5

        <210> 204
        <211> 6
        <212> PRT
        <213>

        <220>
        <221> Xaa in locations 2 to 7 is an amino acid
        <223> Internal fragment

        <400> 204

Cys Xaa Xaa Xaa Xaa Xaa Xaa
1   5

        <210> 204
        <211> 6
        <212> PRT
        <213>

        <220>
        <221> Xaa in locations 2 to 6 is an amino acid
        <223> Internal fragment

        <400> 204

Cys Xaa Xaa Xaa Xaa Xaa
1   5

        <210> 205
        <211> 8
        <212> PRT
        <213>

        <220>
        <221> Xaa in locations 2 to 8 is an amino acid
        <223> Internal fragment

        <400> 205

```
Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1               5


       <210> 206
       <211> 7
       <212>  PRT
       <213>


       <220>
       <221> Xaa in locations 2 to 6 is an amino acid
       <223>  Internal fragment


       <400>  206

Cys Xaa Xaa Xaa Xaa Xaa Cys
 1               5


       <210> 207
       <211> 6
       <212>  PRT
       <213>


       <220>
       <221> Xaa in locations 2 to 5 is an amino acid
       <223>  Internal fragment


       <400>  207

Cys Xaa Xaa Xaa Xaa Cys
 1               5


       <210> 207
       <211> 6
       <212>  PRT
       <213>


       <220>
       <221> Xaa in locations 2 to 5 is an amino acid
       <223>  Internal fragment


       <400>  207

Cys Xaa Xaa Xaa Cys
 1               5


       <210> 209
       <211> 23
       <212>  PRT
       <213>


       <220>
       <221> Xaa in locations 1 to 3 and locations 5 to 23 is an amino acid
       <223>  Internal fragment


       <400>  209
```

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10   15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa
            20

        <210> 210
        <211> 22
        <212> PRT
        <213>

        <220>
        <221> Xaa in locations 1 to 3 and locations 5 to 22 is an amino acid
        <223> Internal fragment

        <400> 210

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10   15

Xaa Xaa Xaa Xaa Xaa Xaa
            20

        <210> 211
        <211> 21
        <212> PRT
        <213>

        <220>
        <221> Xaa in locations 1 to 3 and locations 5 to 21 is an amino acid
        <223> Internal fragment

        <400> 211

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10   15

Xaa Xaa Xaa Xaa Xaa
            20

        <210> 212
        <211> 20
        <212> PRT
        <213>

        <220>
        <221> Xaa in locations 1 to 3 and locations 5 to 20 is an amino acid
        <223> Internal fragment

        <400> 212

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10   15

Xaa Xaa Xaa Xaa

<210> 213
<211> 19
<212> PRT
<213>

<220>
<221> Xaa in locations 1 to 3 and locations 5 to 19 is an amino acid
<223> Internal fragment

<400> 213

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10   15

Xaa Xaa Xaa

<210> 214
<211> 18
<212> PRT
<213>

<220>
<221> Xaa in locations 1 to 3 and locations 5 to 18 is an amino acid
<223> Internal fragment

<400> 214

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10   15

Xaa Xaa

<210> 215
<211> 17
<212> PRT
<213>

<220>
<221> Xaa in locations 1 to 3 and locations 5 to 17 is an amino acid
<223> Internal fragment

<400> 215

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10   15

Xaa

<210> 216
<211> 16
<212> PRT
<213>

<220>

<221> Xaa in locations 1 to 3 and locations 5 to 16 is an amino acid
<223> Internal fragment

<400> 216

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10   15

<210> 217
<211> 15
<212> PRT
<213>

<220>
<221> Xaa in locations 1 to 3 and locations 5 to 15 is an amino acid
<223> Internal fragment

<400> 217

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10   15

<210> 218
<211> 14
<212> PRT
<213>

<220>
<221> Xaa in locations 1 to 3 and locations 5 to 14 is an amino acid
<223> Internal fragment

<400> 218

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10

<210> 219
<211> 13
<212> PRT
<213>

<220>
<221> Xaa in locations 1 to 3 and locations 5 to 13 is an amino acid
<223> Internal fragment

<400> 219

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10

<210> 220
<211> 12
<212> PRT
<213>

<220>

```
<221> Xaa in locations 1 to 3 and locations 5 to 12 is an amino acid
<223>  Internal fragment

<400>  220

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1               5                   10


<210> 221
<211> 11
<212>  PRT
<213>


<220>
<221> Xaa in locations 1 to 3 and locations 5 to 11 is an amino acid
<223>  Internal fragment

<400>  221

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1               5                   10


<210> 222
<211> 10
<212>  PRT
<213>


<220>
<221> Xaa in locations 1 to 3 and locations 5 to 10 is an amino acid
<223>  Internal fragment

<400>  222

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa
 1               5                   10


<210> 223
<211> 5
<212>  PRT
<213>


<220>
<221> Xaa in locations 2 to 5 is an amino acid
<223>  Internal fragment

<400>  223

Cys Xaa Xaa Xaa Xaa
 1               5


<210> 224
<211> 4
<212>  PRT
<213>


<220>
```

<221> Xaa in locations 2 to 4 is an amino acid
<223> Internal fragment

<400> 224

Cys Xaa Xaa Xaa
 1

<210> 225
<211> 6
<212> PRT
<213>

<220>
<221> Xaa in locations 2 to 6 is an amino acid
<223> Internal fragment

<400> 225

Cys Xaa Xaa Xaa Xaa Xaa
 1   5

<210> 226
<211> 5
<212> PRT
<213>

<220>
<221> Xaa in locations 2 to 5 is an amino acid
<223> Internal fragment

<400> 226

Cys Xaa Xaa Xaa Xaa
 1   5

<210> 227
<211> 4
<212> PRT
<213>

<220>
<221> Xaa in locations 2 to 4 is an amino acid
<223> Internal fragment

<400> 227

Cys Xaa Xaa Xaa
 1

<210> 228
<211> 15
<212> PRT
<213>

<220>

<221> Xaa in location 2 and locations 4 to 15 is an amino acid
<223> Internal fragment

<400> 228

Cys Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10   15

<210> 229
<211> 14
<212> PRT
<213>

<220>
<221> Xaa in location 2 and locations 4 to 14 is an amino acid
<223> Internal fragment

<400> 229

Cys Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10

<210> 230
<211> 8
<212> PRT
<213>

<220>
<221> Xaa in location 2 to 8 is an amino acid
<223> Internal fragment

<400> 230

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5

<210> 231
<211> 7
<212> PRT
<213>

<220>
<221> Xaa in location 2 to 7 is an amino acid
<223> Internal fragment

<400> 231

Cys Xaa Xaa Xaa Xaa Xaa Xaa
 1   5

<210> 232
<211> 6
<212> PRT
<213>

<220>

<221> Xaa in location 2 to 6 is an amino acid
<223> Internal fragment

<400> 232

Cys Xaa Xaa Xaa Xaa Xaa
 1   5

<210> 233
<211> 26
<212> PRT
<213>

<220>
<221> Xaa in location 2 to 26 is an amino acid
<223> Internal fragment

<400> 233

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10   15

Xaa Xaa Xaa Xaa Xaa Xee Xaa Xaa Xaa Xaa
            20   25

<210> 234
<211> 25
<212> PRT
<213>

<220>
<221> Xaa in location 2 to 25 is an amino acid
<223> Internal fragment

<400> 234

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10   15

Xee Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
            20   25

<210> 235
<211> 24
<212> PRT
<213>

<220>
<221> Xaa in location 2 to 24 is an amino acid
<223> Internal fragment

<400> 235

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10   15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
          20

     <210> 236
     <211> 23
     <212> PRT
     <213>

     <220>
     <221> Xaa in location 2 to 23 is an amino acid
     <223> Internal fragment

     <400> 236

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10   15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa
          20

     <210> 237
     <211> 22
     <212> PRT
     <213>

     <220>
     <221> Xaa in location 2 to 22 is an amino acid
     <223> Internal fragment

     <400> 237

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10

Xaa Xaa Xaa Xaa Xaa Xaa
          20

     <210> 238
     <211> 21
     <212> PRT
     <213>

     <220>
     <221> Xaa in location 2 to 21 is an amino acid
     <223> Internal fragment

     <400> 238

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10

Xaa Xaa Xaa Xaa Xaa
          20

     <210> 239
     <211> 20

```
<212>  PRT
<213>

<220>
<221> Xaa in location 2 to 20 is an amino acid
<223>  Internal fragment

<400>  239

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1                                                                    5                10

Xaa Xaa Xaa Xaa
          20

<210> 240
<211> 19
<212>  PRT
<213>

<220>
<221> Xaa in location 2 to 19 is an amino acid
<223>  Internal fragment

<400>  240

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1                                                                    5                10

Xaa Xaa Xaa

<210> 241
<211> 18
<212>  PRT
<213>

<220>
<221> Xaa in location 2 to 18 is an amino acid
<223>  Internal fragment

<400>  241

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1                                                                    5                10
Xaa Xaa

<210> 242
<211> 17
<212>  PRT
<213>

<220>
<221> Xaa in location 2 to 17 is an amino acid
<223>  Internal fragment

<400>  242
```

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10
Xaa

        <210> 243
        <211> 16
        <212> PRT
        <213>

        <220>
        <221> Xaa in location 2 to 16 is an amino acid
        <223> Internal fragment

        <400> 243

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10

        <210> 244
        <211> 15
        <212> PRT
        <213>

        <220>
        <221> Xaa in location 2 to 15 is an amino acid
        <223> Internal fragment

        <400> 244

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10

        <210> 245
        <211> 14
        <212> PRT
        <213>

        <220>
        <221> Xaa in location 2 to 14 is an amino acid
        <223> Internal fragment

        <400> 245

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10

        <210> 246
        <211> 13
        <212> PRT
        <213>

        <220>
        <221> Xaa in location 2 to 13 is an amino acid
        <223> Internal fragment

<400> 246

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10

<210> 247
<211> 12
<212> PRT
<213>

<220>
<221> Xaa in location 2 to 12 is an amino acid
<223> Internal fragment

<400> 247

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10

<210> 248
<211> 11
<212> PRT
<213>

<220>
<221> Xaa in location 2 to 11 is an amino acid
<223> Internal fragment

<400> 248

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10

<210> 248
<211> 11
<212> PRT
<213>

<220>
<221> Xaa in location 2 to 11 is an amino acid
<223> Internal fragment

<400> 248

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10

<210> 249
<211> 10
<212> PRT
<213>

<220>
<221> Xaa in location 2 to 10 is an amino acid
<223> Internal fragment

<400> 249

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5

    <210> 250
    <211> 9
    <212> PRT
    <213>

    <220>
    <221> Xaa in location 2 to 9 is an amino acid
    <223> Internal fragment

    <400> 250

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5

    <210> 251
    <211> 8
    <212> PRT
    <213>

    <220>
    <221> Xaa in location 2 to 8 is an amino acid
    <223> Internal fragment

    <400> 251

Cys Xaa Xaa Xaa Xaa Xaa Xaa
1   5

    <210> 252
    <211> 7
    <212> PRT
    <213>

    <220>
    <221> Xaa in location 2 to 7 is an amino acid
    <223> Internal fragment

    <400> 252

Cys Xaa Xaa Xaa Xaa Xaa
1   5

    <210> 253
    <211> 16
    <212> PRT
    <213>

    <220>
    <221> Xaa in location 2 to 16 is an amino acid
    <223> Internal fragment

<400> 253

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5

<210> 254
<211> 8
<212> PRT
<213>

<220>
<221> Xaa in location 2 to 8 is an amino acid
<223> Internal fragment

<400> 254

Cys Xaa Xaa Xaa Xaa Xaa Cys
1   5

<210> 255
<211> 7
<212> PRT
<213>

<220>
<221> Xaa in location 2 to 6 is an amino acid
<223> Internal fragment

<400> 255

Cys Xaa Xaa Xaa Xaa Cys
1   5

Cys Xaa Xaa Xaa Cys
1   5

<210> 257
<211> 5
<212> PRT
<213>

<220>
<221> Xaa in location 2 to 4 is an amino acid
<223> Internal fragment

<400> 257

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10

Xaa Xaa Xaa Xaa Xaa Xaa Xaa
          20

<210> 258

```
<211> 23
<212>  PRT
<213>

<220>
<221> Xaa in locations 1 to 2 and locations 5 to 23 is an amino acid
<223>  Internal fragment

<400>  258

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1                                                                    5         10

Xaa Xaa Xaa Xaa Xaa Xaa
            20

<210> 259
<211> 22
<212>  PRT
<213>

<220>
<221> Xaa in locations 1 to 3 and locations 5 to 22 is an amino acid
<223>  Internal fragment

<400>  259

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1                                                                    5         10

Xaa Xaa Xaa Xaa Xaa
            20

<210> 260
<211> 21
<212>  PRT
<213>

<220>
<221> Xaa in locations 1 to 3 and locations 5 to 21 is an amino acid
<223>  Internal fragment

<400>  260

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1                                                                    5         10

Xaa Xaa Xaa Xaa
            20

<210> 261
<211> 20
<212>  PRT
<213>

<220>
```

```
<221> Xaa in locations 1 to 3 and locations 5 to 20 is an amino acid
<223>  Internal fragment

<400>  261

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1                                                               5          10

Xaa Xaa Xaa


<210> 262
<211> 219
<212>  PRT
<213>

<220>
<221> Xaa in locations 1 to 3 and locations 5 to 19 is an amino acid
<223>  Internal fragment

<400>  262

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1                                                               5          10

Xaa Xaa


<210> 263
<211> 18
<212>  PRT
<213>

<220>
<221> Xaa in locations 1 to 3 and locations 5 to 18 is an amino acid
<223>  Internal fragment

<400>  263

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1                                                               5          10

Xaa


<210> 264
<211> 17
<212>  PRT
<213>

<220>
<221> Xaa in locations 1 to 3 and locations 5 to 17 is an amino acid
<223>  Internal fragment

<400>  264

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
```

```
<210> 265
<211> 16
<212>  PRT
<213>

<220>
<221> Xaa in locations 1 to 3 and locations 5 to 16 is an amino acid
<223>  Internal fragment

<400>  265
```

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa

```
<210> 266
<211> 15
<212>  PRT
<213>

<220>
<221> Xaa in locations 1 to 3 and locations 5 to 15 is an amino acid
<223>  Internal fragment

<400>  266
```

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa

```
<210> 267
<211> 14
<212>  PRT
<213>

<220>
<221> Xaa in locations 1 to 3 and locations 5 to 14 is an amino acid
<223>  Internal fragment

<400>  267
```

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa

```
<210> 269
<211> 12
<212>  PRT
<213>

<220>
<221> Xaa in locations 1 to 3 and locations 5 to 12 is an amino acid
<223>  Internal fragment

<400>  269
```

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa

<210> 270
<211> 11
<212> PRT
<213>

<220>
<221> Xaa in locations 1 to 3 and locations 5 to 11 is an amino acid
<223> Internal fragment

<400> 270

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10

<210> 271
<211> 10
<212> PRT
<213>

<220>
<221> Xaa in locations 1 to 3 and locations 5 to 10 is an amino acid
<223> Internal fragment

<400> 271

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10

<210> 272
<211> 5
<212> PRT
<213>

<220>
<221> Xaa in locations 2 to 5 is an amino acid
<223> Internal fragment

<400> 272

Cys Xaa Xaa Xaa Xaa
1   5

<210> 273
<211> 4
<212> PRT
<213>

<220>
<221> Xaa in locations 2 to 4 is an amino acid
<223> Internal fragment

<400> 273

Cys Xaa Xaa Xaa

1

<210> 274
<211> 6
<212> PRT
<213>

<220>
<221> Xaa in locations 2 to 6 is an amino acid
<223> Internal fragment

<400> 274

Cys Xaa Xaa Xaa Xaa Xaa
 1   5

<210> 275
<211> 5
<212> PRT
<213>

<220>
<221> Xaa in locations 2 to 5 is an amino acid
<223> Internal fragment

<400> 275

Cys Xaa Xaa Xaa Xaa
 1   5

<210> 276
<211> 4
<212> PRT
<213>

<220>
<221> Xaa in locations 2 to 4 is an amino acid
<223> Internal fragment

<400> 276

Cys Xaa Xaa Xaa
 1

<210> 277
<211> 15
<212> PRT
<213>

<220>
<221> Xaa in location 2 and locations 4 to 15 is an amino acid
<223> Internal fragment

<400> 277

Cys Xaa Cys Xaa Xaa Xaa Xaa Esa Xaa Xaa Xaa Xaas Xaa Xaa Xaa

```
<210> 278
<211> 14
<212>  PRT
<213>

<220>
<221> Xaa in location 2 and locations 4 to 14 is an amino acid
<223>  Internal fragment

<400>  278
```

Cys Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10

```
<210> 279
<211> 13
<212>  PRT
<213>

<220>
<221> Xaa in location 2 and locations 4 to 13 is an amino acid
<223>  Internal fragment

<400>  279
```

Cys Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10

```
<210> 280
<211> 8
<212>  PRT
<213>

<220>
<221> Xaa in location 2 to 8 is an amino acid
<223>  Internal fragment

<400>  280
```

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5

```
<210> 281
<211> 7
<212>  PRT
<213>

<220>
<221> Xaa in location 2 to 7 is an amino acid
<223>  Internal fragment

<400>  281
```

Cys Xaa Xaa Xaa Xaa Xaa Xaa

```
<210> 282
<211> 6
<212>  PRT
<213>

<220>
<221> Xaa in locations 2 to 6 is an amino acid
<223>  Internal fragment

<400>  282
```

Cys Xaa Xaa Xaa Xaa Xaa
 1   5

```
<210> 283
<211> 26
<212>  PRT
<213>

<220>
<221> Xaa in locations 2 to 26 is an amino acid
<223>  Internal fragment

<400>  283

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1                                                               5           10

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
            20                                              25

<210> 284
<211> 25
<212>  PRT
<213>

<220>
<221> Xaa in locations 2 to 25 is an amino acid
<223>  Internal fragment

<400>  284

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1                                                               5           10

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
            20                                              25

<210> 285
<211> 24
<212>  PRT
<213>

<220>
<221> Xaa in locations 2 to 24 is an amino acid
<223>  Internal fragment

<400>  285

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1                                                               5           10

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
            20

<210> 286
<211> 23
<212>  PRT
```

<213>

<220>
<221> Xaa in locations 2 to 23 is an amino acid
<223> Internal fragment

<400> 286

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10

Xaa Xaa Xaa Xaa Xaa Xaa Xaa
          20

<210> 287
<211> 22
<212> PRT
<213>

<220>
<221> Xaa in locations 2 to 22 is an amino acid
<223> Internal fragment

<400> 287

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10

Xaa Xaa Xaa Xaa Xaa Xaa
          20

<210> 288
<211> 21
<212> PRT
<213>

<220>
<221> Xaa in locations 2 to 21 is an amino acid
<223> Internal fragment

<400> 288

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10

Xaa Xaa Xaa Xaa Xaa
          20

<210> 289
<211> 20
<212> PRT
<213>

```
        <220>
        <221> Xaa in locations 2 to 20 is an amino acid
        <223>  Internal fragment

        <400>  289

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
  1                                                                        5          10

Xaa Xaa Xaa Xaa
            20


        <210> 290
        <211> 19
        <212>  PRT
        <213>


        <220>
        <221> Xaa in locations 2 to 19 is an amino acid
        <223>  Internal fragment

        <400>  290

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
  1                                                                        5          10

Xaa Xaa Xaa


        <210> 291
        <211> 18
        <212>  PRT
        <213>


        <220>
        <221> Xaa in locations 2 to 18 is an amino acid
        <223>  Internal fragment

        <400>  291

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
  1                                                                        5          10

Xaa Xaa


        <210> 292
        <211> 17
        <212>  PRT
        <213>


        <220>
        <221> Xaa in locations 2 to 17 is an amino acid
        <223>  Internal fragment

        <400>  292
```

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10

Xaa

        <210> 293
        <211> 16
        <212> PRT
        <213>

        <220>
        <221> Xaa in locations 2 to 16 is an amino acid
        <223> Internal fragment

        <400> 293

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10

        <210> 294
        <211> 15
        <212> PRT
        <213>

        <220>
        <221> Xaa in locations 2 to 15 is an amino acid
        <223> Internal fragment

        <400> 294

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10

        <210> 295
        <211> 14
        <212> PRT
        <213>

        <220>
        <221> Xaa in locations 2 to 14 is an amino acid
        <223> Internal fragment

        <400> 295

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10

        <210> 296
        <211> 13
        <212> PRT
        <213>

        <220>
        <221> Xaa in locations 2 to 13 is an amino acid
        <223> Internal fragment

<400> 296

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10

<210> 297
<211> 12
<212> PRT
<213>

<220>
<221> Xaa in locations 2 to 12 is an amino acid
<223> Internal fragment

<400> 297

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10

<210> 298
<211> 111
<212> PRT
<213>

<220>
<221> Xaa in locations 2 to 11 is an amino acid
<223> Internal fragment

<400> 298

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10

<210> 299
<211> 10
<212> PRT
<213>

<220>
<221> Xaa in locations 2 to 10 is an amino acid
<223> Internal fragment

<400> 299

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10

<210> 300
<211> 9
<212> PRT
<213>

<220>
<221> Xaa in locations 2 to 9 is an amino acid
<223> Internal fragment

<400> 300

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5

      <210> 301
      <211> 8
      <212> PRT
      <213>

      <220>
      <221> Xaa in locations 2 to 8 is an amino acid
      <223> Internal fragment

      <400> 301

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5

      <210> 302
      <211> 7
      <212> PRT
      <213>

      <220>
      <221> Xaa in locations 2 to 7 is an amino acid
      <223> Internal fragment

      <400> 302

Cys Xaa Xaa Xaa Xaa Xaa Xaa
1   5

      <210> 303
      <211> 6
      <212> PRT
      <213>

      <220>
      <221> Xaa in locations 2 to 6 is an amino acid
      <223> Internal fragment

      <400> 303

Cys Xaa Xaa Xaa Xaa Xaa
1   5

      <210> 304
      <211> 5
      <212> PRT
      <213>

      <220>
      <221> Xaa in locations 2 to 5 is an amino acid
      <223> Internal fragment

```
<400>  304

Cys Xaa Xaa Xaa Xaa
 1                                                                        5


    <210> 305
    <211> 4
    <212>  PRT
    <213>

    <220>
    <221> Xaa in locations 2 to 4 is an amino acid
    <223>  Internal fragment

    <400>  305

Cys Xaa Xaa Xaa
 1


    <210> 306
    <211> 3
    <212>  PRT
    <213>

    <220>
    <221> Xaa in locations 2 to 3 is an amino acid
    <223>  Internal fragment

    <400>  306

Cys Xaa Xaa
 1


    <210> 307
    <211> 2
    <212>  PRT
    <213>

    <220>
    <221> Xaa in locations 2 to 2 is an amino acid
    <223>  Internal fragment

    <400>  307

Cys Xaa
 1                                    \


    <210> 308
    <211> 8
    <212>  PRT
    <213>

    <220>
    <221> Xaa in locations 2 to 8 is an amino acid
    <223>  Internal fragment
```

<400> 308

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5

       <210> 309
       <211> 7
       <212> PRT
       <213>

       <220>
       <221> Xaa in locations 2 to 6 is an amino acid
       <223> Internal fragment

       <400> 309

Cys Xaa Xaa Xaa Xaa Xaa Cys
1   5

       <210> 310
       <211> 6
       <212> PRT
       <213>

       <220>
       <221> Xaa in locations 2 to 5 is an amino acid
       <223> Internal fragment

       <400> 310

Cys Xaa Xaa Xaa Xaa Cys
1   5

       <210> 311
       <211> 5
       <212> PRT
       <213>

       <220>
       <221> Xaa in locations 2 to 4 is an amino acid
       <223> Internal fragment

       <400> 311

Cys Xaa Xaa Xaa Cys
1   5

       <210> 312
       <211> 23
       <212> PRT
       <213>

       <220>
       <221> Xaa in locations 1 to 3 and locations 5 to 23 is an amino acid
       <223> Internal fragment

<400> 312

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10

Xaa Xaa Xaa Xaa Xaa Xaa Xaa
            20

        <210> 313
        <211> 22
        <212> PRT
        <213>

        <220>
        <221> Xaa in locations 1 to 3 and locations 5 to 22 is an amino acid
        <223> Internal fragment

        <400> 313

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10

Xaa Xaa Xaa Xaa Xaa Xaa
            20

        <210> 314
        <211> 21
        <212> PRT
        <213>

        <220>
        <221> Xaa in locations 1 to 3 and locations 5 to 21 is an amino acid
        <223> Internal fragment

        <400> 314

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10

Xaa Xaa Xaa Xaa Xaa
            20

        <210> 315
        <211> 20
        <212> PRT
        <213>

        <220>
        <221> Xaa in locations 1 to 3 and locations 5 to 20 is an amino acid
        <223> Internal fragment

        <400> 315

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Eas Xaa Xaa Xaa Xaa
1   5   10

Xaa Xaa Xaa Xaa
                20

        <210> 316
        <211> 19
        <212> PRT
        <213>

        <220>
        <221> Xaa in locations 1 to 3 and locations 5 to 19 is an amino acid
        <223> Internal fragment

        <400> 316

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10

Xaa Xaa Xaa

        <210> 317
        <211> 18
        <212> PRT
        <213>

        <220>
        <221> Xaa in locations 1 to 3 and locations 5 to 18 is an amino acid
        <223> Internal fragment

        <400> 317

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10

Xaa Xaa

        <210> 318
        <211> 17
        <212> PRT
        <213>

        <220>
        <221> Xaa in locations 1 to 3 and locations 5 to 17 is an amino acid
        <223> Internal fragment

        <400> 318

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10

Xaa

        <210> 319
        <211> 16
        <212> PRT
        <213>

```
<220>
<221> Xaa in locations 1 to 3 and locations 5 to 16 is an amino acid
<223>  Internal fragment

<400>  319

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1                                                           5           10


       <210> 320
       <211> 15
       <212>  PRT
       <213>


       <220>
       <221> Xaa in locations 1 to 3 and locations 5 to 15 is an amino acid
       <223>  Internal fragment

       <400>  320

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1                                                           5           10


       <210> 321
       <211> 14
       <212>  PRT
       <213>


       <220>
       <221> Xaa in locations 1 to 3 and locations 5 to 14 is an amino acid
       <223>  Internal fragment

       <400>  321

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1                                                           5           10


       <210> 322
       <211> 13
       <212>  PRT
       <213>


       <220>
       <221> Xaa in locations 1 to 3 and locations 5 to 13 is an amino acid
       <223>  Internal fragment

       <400>  322

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1                                                           5           10


       <210> 323
       <211> 13
       <212>  PRT
       <213>
```

```
<220>
<221> Xaa in locations 1 to 3 and locations 5 to 12 is an amino acid
<223>  Internal fragment

<400>  323

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1                                                            5          10


<210> 324
<211> 11
<212>  PRT
<213>


<220>
<221> Xaa in locations 1 to 3 and locations 5 to 11 is an amino acid
<223>  Internal fragment

<400>  324

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1                                                            5          10


<210> 325
<211> 10
<212>  PRT
<213>


<220>
<221> Xaa in locations 1 to 3 and locations 5 to 10 is an amino acid
<223>  Internal fragment

<400>  325

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa
 1                                                            5          10


<210> 326
<211> 5
<212>  PRT
<213>


<220>
<221> Xaa in locations 2 to 5 is an amino acid
<223>  Internal fragment

<400>  326

Cys Xaa Xaa Xaa Xaa
 1                                                            5


<210> 327
<211> 4
<212>  PRT
<213>
```

```
        <220>
        <221> Xaa in locations 2 to 4 is an amino acid
        <223>  Internal fragment

        <400>  327

Cys Xaa Xaa Xaa
 1


        <210> 328
        <211> 6
        <212>  PRT
        <213>


        <220>
        <221> Xaa in locations 2 to 6 is an amino acid
        <223>  Internal fragment

        <400>  328

Cys Xaa Xaa Xaa Xaa Xaa
 1                                                                                5


        <210> 329
        <211> 5
        <212>  PRT
        <213>


        <220>
        <221> Xaa in locations 2 to 5 is an amino acid
        <223>  Internal fragment

        <400>  329

Cys Xaa Xaa Xaa Xaa
 1                                                                                5


        <210> 330
        <211> 4
        <212>  PRT
        <213>


        <220>
        <221> Xaa in locations 2 to 4 is an amino acid
        <223>  Internal fragment

        <400>  330

Cys Xaa Xaa Xaa
 1


        <210> 331
        <211> 15
        <212>  PRT
        <213>
```

```
<220>
<221> Xaa in location 2 and locations 4 to 15 is an amino acid
<223>  Internal fragment

<400>  331

Cys Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1                                               5          10


<210> 332
<211> 14
<212>  PRT
<213>


<220>
<221> Xaa in location 2 and locations 4 to 14 is an amino acid
<223>  Internal fragment

<400>  332

Cys Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1                                               5          10


<210> 333
<211> 8
<212>  PRT
<213>


<220>
<221> Xaa in location 2 to 8 is an amino acid
<223>  Internal fragment

<400>  333

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1                            5


<210> 334
<211> 7
<212>  PRT
<213>


<220>
<221> Xaa in location 2 to 7 is an amino acid
<223>  Internal fragment

<400>  334

Cys Xaa Xaa Xaa Xaa Xaa Xaa
 1                        5


<210> 335
<211> 6
<212>  PRT
<213>
```

```
<220>
<221> Xaa in location 2 to 6 is an amino acid
<223>  Internal fragment

<400>  335

Cys Xaa Xaa Xaa Xaa Xaa
 1                                                                    5


        <210> 336
        <211> 26
        <212>  PRT
        <213>


        <220>
        <221> Xaa in location 2 to 26 is an amino acid
        <223>  Internal fragment

        <400>  336

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1                                               5               10

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
            20                                           25


        <210> 337
        <211> 25
        <212>  PRT
        <213>


        <220>
        <221> Xaa in location 2 to 25 is an amino acid
        <223>  Internal fragment

        <400>  337

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1                                               5               10

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
            20                                           25


        <210> 338
        <211> 24
        <212>  PRT
        <213>


        <220>
        <221> Xaa in location 2 to 24 is an amino acid
        <223>  Internal fragment

        <400>  338

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1                                               5               10
```

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
            20

        <210> 339
        <211> 23
        <212> PRT
        <213>

        <220>
        <221> Xaa in location 2 to 23 is an amino acid
        <223> Internal fragment

        <400> 339

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10

Xaa Xaa Xaa Xaa Xaa Xaa Xaa
            20

        <210> 340
        <211> 22
        <212> PRT
        <213>

        <220>
        <221> Xaa in location 2 to 22 is an amino acid
        <223> Internal fragment

        <400> 340

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10

Xaa Xaa Xaa Xaa Xaa Xaa
            20

        <210> 341
        <211> 21
        <212> PRT
        <213>

        <220>
        <221> Xaa in location 2 to 21 is an amino acid
        <223> Internal fragment

        <400> 341

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10

Xaa Xaa Xaa Xaa Xaa
            20

        <210> 342
        <211> 20

```
<212>  PRT
<213>

<220>
<221> Xaa in location 2 to 20 is an amino acid
<223>  Internal fragment

<400>  342

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1                                                        5          10

Xaa Xaa Xaa Xaa
            20

<210> 343
<211> 19
<212>  PRT
<213>

<220>
<221> Xaa in location 2 to 19 is an amino acid
<223>  Internal fragment

<400>  343

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1                                                        5          10

Xaa Xaa Xaa

<210> 344
<211> 18
<212>  PRT
<213>

<220>
<221> Xaa in location 2 to 18 is an amino acid
<223>  Internal fragment

<400>  344

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1                                                        5          10

Xaa Xaa

<210> 345
<211> 17
<212>  PRT
<213>

<220>
<221> Xaa in location 2 to 17 is an amino acid
<223>  Internal fragment
```

```
          <400>  345

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1                                                               5          10

Xaa

          <210> 346
          <211> 16
          <212>  PRT
          <213>

          <220>
          <221> Xaa in location 2 to 16 is an amino acid
          <223>  Internal fragment

          <400>  346

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1                                                               5          10

          <210> 347
          <211> 15
          <212>  PRT
          <213>

          <220>
          <221> Xaa in location 2 to 15 is an amino acid
          <223>  Internal fragment

          <400>  347

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1                                                               5          10

          <210> 348
          <211> 14
          <212>  PRT
          <213>

          <220>
          <221> Xaa in location 2 to 14 is an amino acid
          <223>  Internal fragment

          <400>  348

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1                                                               5          10

          <210> 349
          <211> 13
          <212>  PRT
          <213>

          <220>
          <221> Xaa in location 2 to 13 is an amino acid
```

<223> Internal fragment

<400> 349

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10

<210> 350
<211> 12
<212> PRT
<213>

<220>
<221> Xaa in location 2 to 12 is an amino acid
<223> Internal fragment

<400> 350

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10

<210> 351
<211> 11
<212> PRT
<213>

<220>
<221> Xaa in location 2 to 11 is an amino acid
<223> Internal fragment

<400> 351

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10

<210> 352
<211> 10
<212> PRT
<213>

<220>
<221> Xaa in location 2 to 10 is an amino acid
<223> Internal fragment

<400> 352

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1   5   10

<210> 353
<211> 9
<212> PRT
<213>

<220>
<221> Xaa in location 2 to 9 is an amino acid

<223> Internal fragment

<400> 353

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5

<210> 354
<211> 8
<212> PRT
<213>

<220>
<221> Xaa in location 2 to 8 is an amino acid
<223> Internal fragment

<400> 354

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5

<210> 355
<211> 7
<212> PRT
<213>

<220>
<221> Xaa in location 2 to 7 is an amino acid
<223> Internal fragment

<400> 355

Cys Xaa Xaa Xaa Xaa Xaa Xaa
 1   5

<210> 356
<211> 6
<212> PRT
<213>

<220>
<221> Xaa in location 2 to 6 is an amino acid
<223> Internal fragment

<400> 356

Cys Xaa Xaa Xaa Xaa Xaa
 1   5